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ABSTRACT

Data from annual surveys of Tech-Prep consortia that were administered to all local consortia in 1993 and 1994 were analyzed to assess the implementation of key school-to-work features in 1994. Among the study's key findings were the following: Tech-Prep programs of study may help facilitate creation of career major options in school-to-work systems; Tech-Prep has helped introduce some forms of integrated academic curricula; many postsecondary schools were already involved in articulation efforts with secondary schools; the industry-recognized certificates encouraged under the School-to-Work Opportunities Act (STWOA) were not yet widely adopted; access to workplace experiences was increasing; full documentation of student participation in workplace experiences was relatively rate; only a small fraction of Tech-Prep students were involved in any workplace activity; many Tech-Prep consortia included the broad membership promoted by the STWOA; few Tech-Prep communities received STWOA grants for school-to-work system development in 1994; most early STWOA grants went to school-to-work partnerships whose composition was not aligned with the local Tech-Prep consortium; and consortia with first-year STWOA funds were more likely to be implementing key school-to-work and Tech-Prep components than other consortia were. (Contains 22 tables/figures.) (MN)

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BUILDING SCHOOL-TO-WORK SYSTEMS ON A TECH-PREP FOUNDATION

The Status of School-to-Work Features in Tech-Prep Initiatives

1996

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EXECUTIVE SUMMARY

National concern during the past decade about the adequacy of the American educational system's ability to prepare young people for successful careers has led to several important new federal initiatives. Among these are the Tech-Prep Education Act, included in the 1990 amendments to the Carl D. Perkins Vocational Education Act, and the more recent School-to-Work Opportunities Act of 1994 (STWOA). Both initiatives were designed to improve the knowledge, skills, and employment preparation of American youths by stimulating state and local reform efforts. The two laws promote some similar practices that involve many of the same local partners; in fact, the STWOA encourages communities to build school-to-work systems by extending or enhancing existing programs, including Tech-Prep.

However, STWOA funding is intended to support initiatives that are broader than traditional Tech-Prep programs, including additional components and groups of students. This objective, anticipated to some extent by Tech-Prep practitioners, has begun shifting Tech-Prep implementation efforts in some communities toward the school-to-work model, according to informal discussions with state and local Tech-Prep coordinators. Thus, information about current Tech-Prep efforts can provide early insights into the effects of the STWOA at the local level.

This report assesses the implementation status of key school-to-work features in Tech-Prep communities in 1994, using data from annual surveys of Tech-Prep consortia. The surveys are being conducted by Mathematica Policy Research, Inc. as part of the national Evaluation of the Tech-Prep Education Program for the U.S. Department of Education (ED). The survey questionnaire administered to all local consortia beginning in 1993 includes items on school-to-work components, both because there is overlap in some elements between the two initiatives and because ED requested the inclusion of particular questions to provide a more comprehensive picture of early school-to-work implementation and issues in Tech-Prep communities.

Data from the Tech-Prep surveys are particularly relevant for assessing early national school-to-work progress, because they illustrate reform activity in a substantial number of communities around the country. The close to 1,000 Tech-Prep consortia operating in 1994 included more than half of all U.S. school districts and three-quarters of all U.S. secondary students. Moreover, most two-year community and technical colleges, as well as a growing number of four-year institutions, are members of Tech-Prep consortia. High response rates to the Tech-Prep surveys in both 1993 and 1994, and the significant "coverage" of consortia, provide a credible, national picture of school-to-work implementation within the Tech-Prep framework.

Several findings can be drawn from the survey data about the extent to which Tech-Prep communities were developing school-to-work components in 1994, how implementation had expanded since 1993, and the types of approaches consortia used. Key points are summarized below.

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SCHOOL-BASED LEARNING

Tech-Prep programs of study may help facilitate the creation of career major options in school-to-work systems

Encouraging students to choose and follow a sequence of challenging, integrated academic and occupational courses that prepares them for an identified career is an important element of both school-to-work and Tech-Prep. Tech-Prep programs of study could conceivably be the basis for expanding into systems of well-defined career majors, if they are widely implemented as coherent course sequences focused on broad industry or occupational clusters.

The survey data suggest that in 1994, prospects for developing meaningful school-to-work career majors based on Tech-Prep programs are promising but somewhat uncertain:

- Many consortia--more than two-thirds, and in a total of 2,748 districts--reported offering some type of program of study to guide students' coursetaking
- Expansion in the reported use of programs of study has been somewhat limited; the same proportion of consortia implemented them in 1993 and 1994, and fewer than one third offered them in more districts in 1994
- The definition of Tech-Prep programs of study or career clusters varies significantly; some proportion of them are similar to the career major concept promoted by the STWOA, but at least 20 percent of consortium programs--and probably more-- are too narrowly-focused to qualify as career majors or reflect only a casual translation of students' career interests into course selections

Tech-Prep has helped introduce some forms of integrated academic curricula, but implementation is currently limited

As a result of Tech-Prep, some schools are already using academic curricula that emphasize applied or contextual learning--one form of academic and vocational integration on which school-to-work systems can be built. However, the Tech-Prep data suggest that communities still have a long way to go before implementing applied academic curricula systemwide:

- More than 90 percent of all consortia have introduced applied academic curricula in the past two or three years that were either developed at the state or local level, or, more commonly, purchased from commercial vendors
- New applied curricula are available in a relatively small proportion of schools and in a limited number of classes; for example, in consortia that report using the most popular of the commercially available curricula, they were doing so in only slightly more than a third of their secondary schools, and locally- or state-developed applied curricula are even less widespread.

Many postsecondary institutions are already involved in articulation efforts with secondary schools

Two-year colleges that join school-to-work partnerships will most likely bring with them a familiarity with secondary-postsecondary articulation and a set of valuable institutional relationships:

- By fall 1994, close to 90 percent of Tech-Prep consortia had signed articulation agreements between local secondary and postsecondary institutions
- Consortia with signed articulation agreements reported a total of 1,300 postsecondary institutions as partners in these agreements. This figure represents nearly all of the two-year institutions that were members of these consortia and suggests that Tech-Prep has affected most of the nation's community colleges

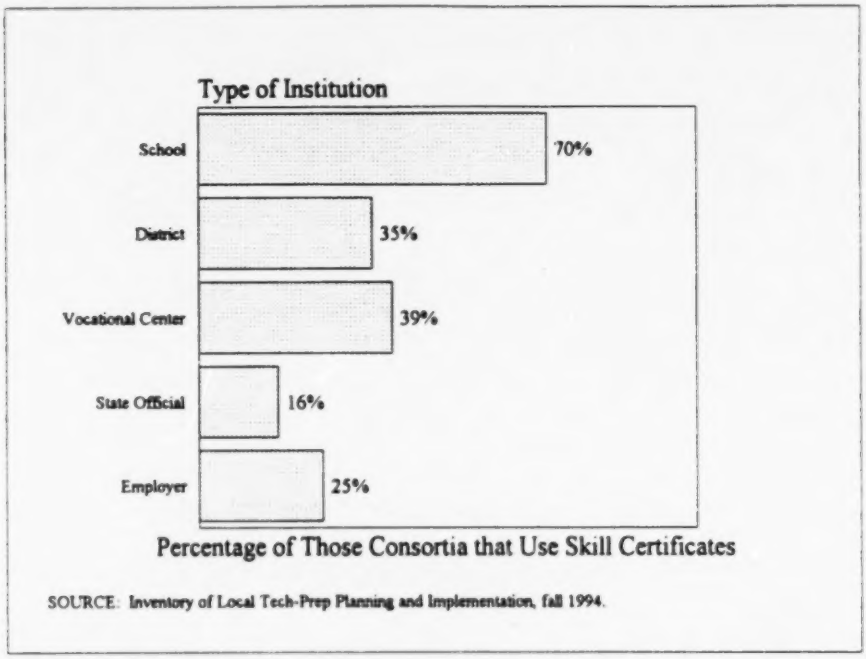
Industry-recognized skill certificates, as encouraged under the STWOA, have so far not been widely adopted

Unlike other components of the school-to-work model, skill certificates were never emphasized in the Tech-Prep legislation. It is not surprising that, in fall 1994, relatively few consortia had a process for assessing particular skills and recording the attainment of these skills on a certificate that could be used to document qualifications for potential employers. The data indicate that:

- About one third of all consortia reported awarding skill certificates in at least one of their consortium schools
- Certificates are most frequently awarded at the secondary level, which suggests that school-to-work activity is currently focusing on high schools and that many of the skill certificates reported by Tech-Prep consortia may be no different from those given to secondary vocational course completers in some communities
- Technical competencies and program completion are the most common outcomes documented in skill certificates
- Employers are relatively seldom involved in certifying students' mastery of skills, providing even stronger evidence that the skill certificates Tech-Prep consortia award may be associated with traditional vocational education completion rather than with more comprehensive work-based learning programs, in which employer assessment and input are considered critical (Figure 1)

FIGURE 1

APPROVAL RESPONSIBILITY FOR SKILL CERTIFICATES



SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1994.

WORK-BASED LEARNING

Access to workplace experiences has increased

The emphasis in the STWOA on workplace experiences is probably contributing to changes in Tech-Prep implementation:

- A higher proportion of consortia made workplace activities available for Tech-Prep students in 1994 (72 percent) than in 1993 (63 percent); those that offered workplace activities in both 1993 and 1994 did so in a somewhat higher proportion of districts in 1994 (60 percent) than in 1993 (56 percent)

- Availability was still limited to only a subset of consortium districts, however; for example, half of all consortia in fall 1994 (434) reported that paid part-time, school-year employment was available to Tech-Prep and other students, but these experiences were offered in only 42 percent of these consortia's districts (1,540 districts out of 3,650)

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Full documentation of student participation in workplace experiences is relatively rare

Evidence from the fall 1994 survey underscores consortia's current difficulty in collecting information on the number of Tech-Prep students in workplace activities and portends obstacles school-to-work partnerships will probably face:

- Only 28 percent of the 619 consortia that reported making workplace experiences available for Tech-Prep students were able to record consistently the number of participants in those activities during the 1993-1994 school year
- Even consortia that could document Tech-Prep students' workplace participation could do so in fewer than one third of their consortium districts

Tech-Prep students participated in various workplace activities but visits to work sites were the most common

A variety of activities are considered work-based learning opportunities in the STWOA, and Tech-Prep students appear to have participated to some extent in most of them (Figure 2):

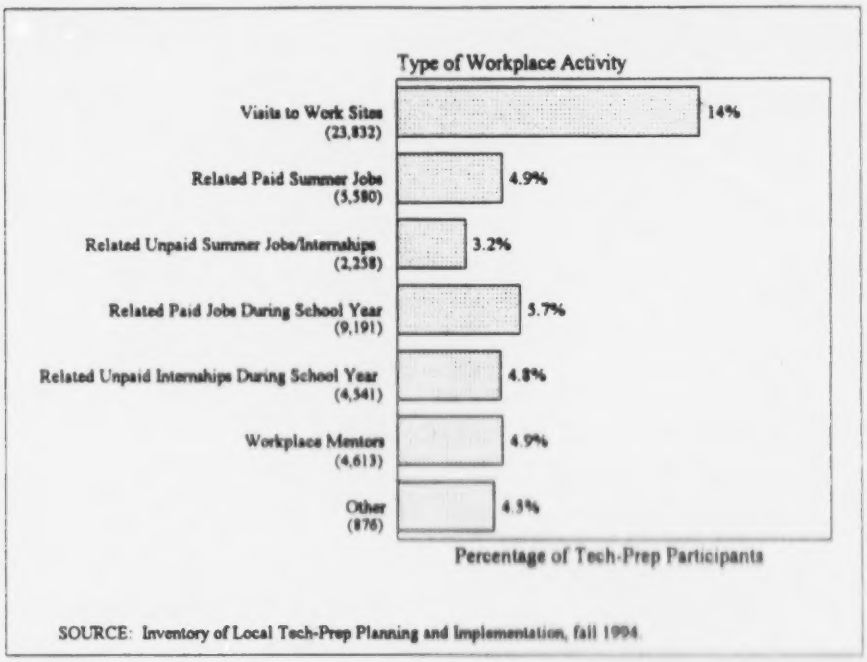
- More Tech-Prep students were involved in work-site visits than any other type of workplace experience; 23,832 Tech-Prep participants from 144 consortia visited at least one employer's work site during the 1993-1994 school year
- Paid part-time jobs or internships, which could include jobs associated with cooperative education, work-study, or youth apprenticeship programs during the school year, were the second most common type of workplace activity for Tech-Prep students

Only a small fraction of Tech-Prep students are so far involved in any workplace activity

Many practitioners believe Tech-Prep has the potential to provide a framework for developing school-to-work systems, according to informal discussions with state and local coordinators. To achieve this potential, Tech-Prep programs would have to expand the number of participants and systematically involve the majority of students in work-based learning. The survey data suggest that, at least in 1994, Tech-Prep consortia were quite far from achieving such widespread workplace activity. Among consortia that reported on Tech-Prep involvement in workplace activities, the proportion of Tech-Prep students who participated in these activities was quite small (Figure 2). The largest group of Tech-Prep students (14 percent) was involved in visits to employer work sites. Fewer than five percent of Tech-Prep students had summer or school-year jobs related to their school-based occupational program. Since Tech-Prep participants represent only a fraction of all students, and the STWOA envisions broad participation in workplace activity for students in general, increasing the scale of workplace activity for STW systems remains a substantial challenge.

FIGURE 2

NUMBER AND PROPORTION OF TECH-PREP PARTICIPANTS IN SPECIFIED WORKPLACE ACTIVITIES, 1993-1994 SCHOOL YEAR



SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1994.

COLLABORATION AND CONNECTING ACTIVITIES

Many Tech-Prep consortia include the broad membership the STWOA promotes

Tech-Prep consortia in some communities already include institutions and organizations that go beyond the narrow consortium definition in the legislation and approximate the broad coalitions the STWOA encourages. Although Tech-Prep consortia are only required to include secondary agencies and two-year degree- or certificate-granting postsecondary institutions, many include four-year colleges, businesses, trade associations, and labor groups:

- More than 40 percent of consortia include a four-year college as a member
- Nearly three-quarters of consortia included at least one employer as a member in 1994; local business/industry associations or trade groups, including chambers of commerce, are reportedly members of close to two-thirds of all consortia
- About one-quarter of consortia include labor groups (unions).

These levels of participation in Tech-Prep consortia by entities the STWOA requires do not suggest that all consortia could currently be considered school-to-work partnerships as defined in the

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STWOA. The reported growth of business, industry, and labor membership in Tech-Prep consortia does, however, suggest a response to the expectations of the STWOA. Between 1993 and 1994, both the percentage of consortia that included these groups as members and the total number of these groups participating increased.

Few Tech-Prep communities received STWOA grants for school-to-work system development in 1994

Responses from local Tech-Prep coordinators suggest that some Tech-Prep consortia or subsets of their member districts received STWOA grants for use in the 1994-1995 school year:

- A total of 191 consortia--22 percent of all consortia--reported receiving a STWOA grant by January 1995 that covered all or some of their member districts
- STWOA grants received by consortium members came from direct local grants, state implementation grants, and development grants; 22 consortia reported that their grants had come directly from the national School-to-Work Office, 84 were in the eight states with state implementation grants at that time, and the remaining 85 consortia most likely were awarded funds under their state's development grant

Most early STWOA grants went to school-to-work partnerships whose composition was not aligned with the local Tech-Prep consortium

Direct correspondence between school-to-work partnerships and Tech-Prep consortia appears to have been limited in the first year of STWOA funding, at least with regard to school district membership:

- Nearly 62 percent of the 191 consortia with STWOA funding in fall 1994 reported that school-to-work grants covered only a subset of their consortium districts
- The remaining 38 percent reported that all of their consortium districts were included in a STWOA grant, but the school-to-work grant may have been awarded to an entity that was larger than the Tech-Prep consortium; thus, 38 percent is an upper-bound estimate of the proportion of consortia that in 1994 were identical to STWOA-funded partnerships in terms of district membership
- Overall, among the consortia that received STWOA grants, only about 20 percent of their districts (549 out of 2,568) were covered by those grants

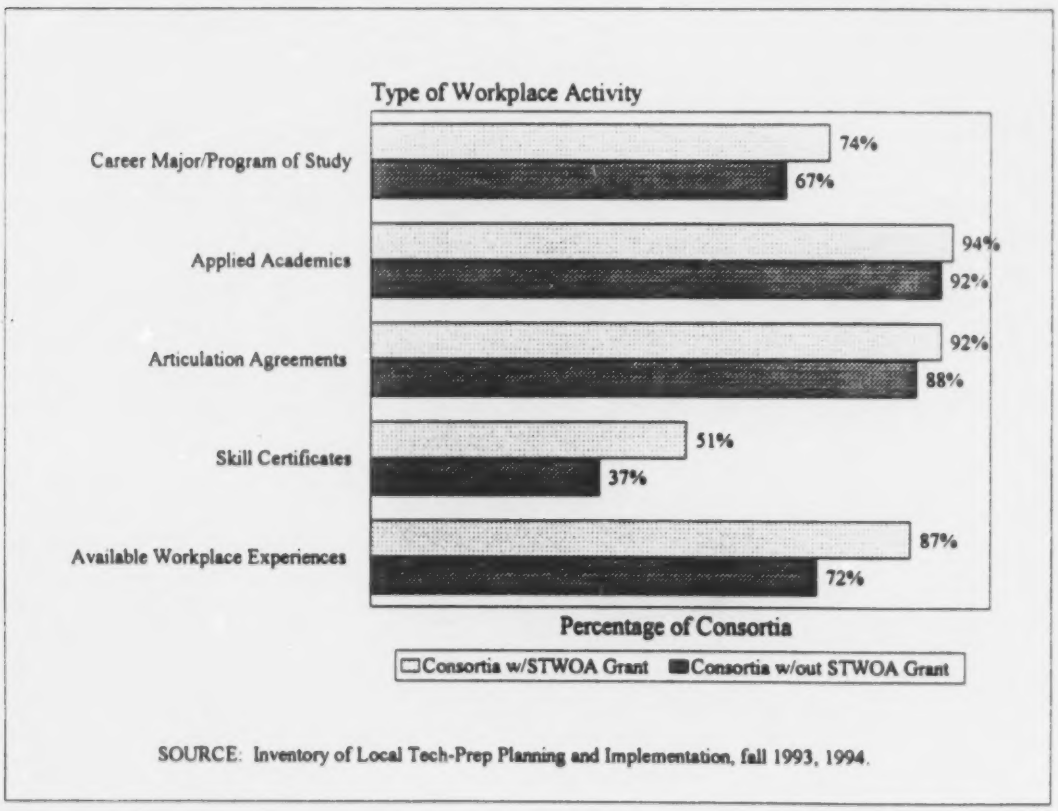
These early signs of organizational distinctions between Tech-Prep and school-to-work at the local level may be a sign of one potential challenge in building STW systems on a Tech-Prep foundation. Substantial efforts may be required to integrate Tech-Prep and STW, particularly where the two initiatives rest on different local alliances.

Consortia with first year STWOA funds were more likely to be implementing key school-to-work and Tech-Prep components than other consortia

Consortia that received early STWOA grants covering at least some of their member districts were more advanced than other consortia. These 191 consortia were more likely to make available career-focused programs of study, academic curricula emphasizing applied learning, articulation agreements, and particularly skill certificate and workplace experiences (Figure 3). These data confirm that both the national School-to-Work Office and state agencies awarded STWOA grants competitively--that is, early funding was given to communities that had demonstrated some experience with important school-to-work elements. The data also suggest that an early start on Tech-Prep development may have been a factor in those awards; consortia with STWOA grants in 1994 were much more likely to have been funded by Title III-E beginning in FY 1992 than in later years.

FIGURE 3

IMPLEMENTATION OF KEY SCHOOL-TO-WORK FEATURES AMONG TECH-PREP CONSORTIA, WITH AND WITHOUT STWOA GRANTS



SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1993, 1994.

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I. THE TECH-PREP FOUNDATION

National concern during the past decade about the adequacy of the American educational system's ability to prepare young people for successful careers has led to several important new federal initiatives. Among these are the Tech-Prep Education Act, included in the 1990 amendments to the Carl D. Perkins Vocational Education Act, and the more recent School-to-Work Opportunities Act of 1994 (STWOA). Both initiatives were designed to improve the knowledge, skills, and employment preparation of American youths by stimulating state and local reform efforts. The two laws promote some similar practices that involve many of the same local partners; in fact, the STWOA encourages communities to build school-to-work systems by extending or enhancing existing programs, including Tech-Prep.

However, STWOA funding is intended to support initiatives that are broader than traditional Tech-Prep programs, including additional components and groups of students. This objective, anticipated to some extent by Tech-Prep practitioners, has begun shifting Tech-Prep implementation efforts in some communities toward the school-to-work model, according to informal discussions with state and local Tech-Prep coordinators. Thus, information about current Tech-Prep efforts--documented in this report--can provide early insights into the effects of the STWOA at the local level.

This report assesses the implementation status of key school-to-work features in Tech-Prep communities using data from two annual surveys of Tech-Prep consortia, conducted in fall 1993 and 1994. The remaining chapters describe the extent to which Tech-Prep consortia are developing the school-based learning, work-based learning, and connecting activities components the STWOA specified. In this chapter, we describe the Tech-Prep and school-to-work models, their common elements, and the data currently available on local implementation.

A. THE TECH-PREP AND SCHOOL-TO-WORK MODELS

The efforts promoted by the Tech-Prep Education Act and the STWOA represent major undertakings by the agencies and institutions involved. Although the models promoted by the two acts are clearly different in expected scope and scale, there is some overlap in key components. The extent to which local Tech-Prep implementation can inform policymakers and practitioners who are interested in early school-to-work development depends largely on the similarities in the designs and practices of the two initiatives.

Tech-Prep

Tech-Prep, formulated most clearly as a program concept by Dale Parnell in the early 1980s, has been viewed primarily as a strategy for improving the skills and employment preparation of American youths who are unlikely to pursue a four-year baccalaureate degree. The Tech-Prep model emphasizes applied learning--teaching academic concepts through practical hands-on experience--and development of clearly defined academic and technical competencies. Students are offered planned career "pathways" that link their high school classes to advanced technical education in community colleges, technical colleges, or apprenticeship programs and, in some cases, to baccalaureate programs. Ideally, these pathways help students develop qualifications for well-paying jobs in fields with strong and growing labor demand.

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Strong interest in the Tech-Prep concept among educators and policymakers, as well as growing concern about strengthening the skill levels of American youths, led to an emphasis on technology-oriented education in the 1990 amendments to the Carl D. Perkins Vocational Education Act of 1984. The amendments, which retitled the legislation the Carl D. Perkins Vocational and Applied Technology Education Act (Perkins Act), provided Tech-Prep program development guidelines and funding in Title III-E, labeled the Tech-Prep Education Act. All programs funded under the Perkins Act, including Tech-Prep, are administered by the U.S. Department of Education (ED), Office of Vocational and Adult Education.

Title III-E of the Perkins Act identified seven essential elements of programs eligible for federal Tech-Prep funding:

1. ***Articulation agreements*** between secondary and postsecondary participants in Tech-Prep consortia, to establish a basic framework that links secondary and postsecondary courses

2. ***A 2+2 or 4+2 design,*** which defines a common core of math, science, communications, and technology for participating students as a basis for more advanced and specialized courses during four- or six-year program sequences leading to at least an associate degree or two-year certificate

3. ***A Tech-Prep curriculum*** appropriate to the needs of each secondary and postsecondary institution, so that the overall program design makes full use of each school's resources but also considers the needs of its student body

4. ***Joint staff development for secondary and postsecondary instructors,*** to promote cooperation and a common understanding of objectives, overcome turf jealousies, and maximize the "seamlessness" of the overall curriculum content in four- or six-year program sequences

5. ***Secondary and postsecondary counselor training,*** to promote effective student recruitment, retention, and postprogram employment placement

6. ***Measures to ensure access*** for special populations, such as minorities and students at risk of dropping out of high school

7. ***Preparatory services,*** such as recruiting, counseling, and assessment, to help students understand the Tech-Prep option, explore the educational and career options open to them through Tech-Prep, and make decisions on program and course selection and career direction

Title III-E authorizes federal funding for Tech-Prep programs that meet the design and implementation requirements specified in the legislation. Federal funds are distributed to states, which then award grants for planning and implementation to consortia of local educational agencies that operate secondary schools and postsecondary institutions to plan and operate Tech-Prep programs. The U.S. Congress first appropriated $63.4 million to support development of Tech-Prep programs in fiscal year (FY) 1992. It has continued to fund Tech-Prep in each subsequent year. FY 1996 funding for Title III-E is $107.6 million.

School-to-Work

The STWOA built on a variety of strategies for improving young people's school-to-work transition, including Tech-Prep, cooperative education, and youth academies. These previous education reform efforts emphasized different aspects of the transition challenge, including the need to motivate students to complete high school or adapt to the demands and habits of work, the importance of strengthening basic academic skills by teaching these skills with a hands-on, contextual learning approach, and the urgency of helping students identify a tentative career direction. The STWOA attempts to combine these goals into a comprehensive system of school-based and work-based experiences for students that will enhance their academic foundation and career preparation.

The STWOA's primary objective is to provide initial support--seed money or venture capital--for states and localities to build school-to-work systems. Unlike previous school-to-work strategies, which often targeted particular groups of students, school-to-work systems are intended to serve all students: college-bound and non-college-bound, those with disabilities, limited English proficiency, diverse educational and cultural backgrounds, and varied career interests, and even individuals who may already have left school. The STWOA outlines overall objectives for the reforms but provides considerable latitude to states and local partnerships to tailor school-to-work systems to their own needs and constraints. STWOA specifies three key components for school-to-work implementation:

1. ***School-based learning:*** classroom instruction linked to workplace experiences that provide students with the information and skills needed to identify and prepare for promising careers

2. ***Work-based learning:*** work experience, structured training, and other workplace activities appropriate to students' career interests and linked to their school curricula

3. ***Connecting activities:*** efforts by partnership members to help employers and schools forge and maintain links between the school-based and work-based component

Specifically, school-to-work systems are required to include the following key elements in their designs:

- ***A planned program of student training*** and work experience coordinated with school-based learning

- ***A program of study*** designed to meet state academic standards, including those established under GOALS 2000, and to meet the requirements for transition to a postsecondary education and for achievement of a skills certificate

- ***Integration*** of academic and vocational education

- Broad instruction in the classroom and workplace that, to the extent possible, exposes students to ***all aspects of an industry***

- ***Linkages*** between secondary and postsecondary education and training

- ***Career awareness***, exploration, and counseling
- Selection of a ***career major*** no later than at the beginning of 11th grade
- Workplace ***mentoring*** and instruction in general workplace competencies
- Assistance for students in ***finding jobs and making the transition*** to postsecondary education and training

In addition, the STWOA specifies that partnerships funded under the act must include employers, secondary and postsecondary educational agencies or institutions, labor organizations, and students.

The STWOA provided for joint administration of the new federal initiative by ED and the U.S. Department of Labor (DOL). To coordinate administration more effectively, ED and DOL established the national School-to-Work Office, staffed by personnel from both agencies. Under the act, states are encouraged to apply to the national School-to-Work Office for development and implementation grants to assist them in planning and establishing statewide school-to-work systems. The STWOA also provides funding for implementation grants made directly to local partnerships that have made progress in developing school-to-work systems within their communities. In summer 1994, implementation grants were awarded to eight states and 36 local partnerships. An additional 19 states and 44 partnerships were awarded implementation grants in late 1995 and early 1996.

Common Elements of Tech-Prep and School-to-Work

The Tech-Prep and School-to-Work initiatives include some similar features, both as designed in the authorizing statutes and as implemented by local practitioners (Table I.1). Most clearly, both models emphasize integrating academic and vocational education and linking secondary and postsecondary educational experiences. The types of institutions, agencies, and organizations included in Tech-Prep consortia will, according to the STWOA, also be required members of school-to-work partnerships. Both initiatives emphasize the importance of career counseling to assist students in making educational and career decisions and of defining programs of study to help students meet career objectives. Both also stress the role of staff development and training to help personnel adapt to new roles and responsibilities.

There are some significant differences in the models promoted by the Tech-Prep Education Act and the STWOA, however. Unlike School-to-Work, Tech-Prep was not designed to include a work-based learning component. Employers are intended to play a more significant role and be more active in school-to-work partnerships than was expected for Tech-Prep consortia. Moreover, at least as originally conceived, Tech-Prep is a program serving particular groups of students--the "neglected majority," while the STWOA encourages a system of school-based and work-based activities that engages all students to some extent.

These design distinctions have become somewhat blurred as practitioners have responded to local needs and constraints, state and federal leadership, and funding. Even before passage of the STWOA in spring 1994, some consortia were already implementing or starting to implement Tech-Prep education reforms broadly rather than as distinct program options. Some Tech-Prep programs, developed in close

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TABLE I.1

SCHOOL-TO-WORK ELEMENTS INCLUDED IN TECH-PREP MODEL

Elements of School-to-Work	Form of Tech-Prep Implementation
School-Based Learning	
Career Counseling and Exploration	Key Component
Selection of a Career Major	Common Practice
Defined Programs of Study with a Career Focus	Key Component
Integration of Academic and Vocational Education	Key Component
Integration of School-based and Work-Based Learning	Not Widely Emphasized
Instruction in All Aspects of the Industry	Not Widely Emphasized
Scheduled Evaluations of Student Progress	Not Widely Emphasized
Facilitation of Entry into Postsecondary Education/Training	Key Component
Skill Certificates	Not Widely Emphasized
Work-Based Learning	
Work Experiences	Common Practice
Connecting Activities	
Matching Students with Work-Based Opportunities	Common Practice
School-Site Mentor	Not Widely Emphasized
Staff Training	Key Component
Employer Recruitment	Common Practice
Job Placement Assistance	Not Widely Emphasized
Student Data Collection and Analysis	Common Practice
Links to Other Youth Development Activities	Not Widely Emphasized

NOTE: Elements of school-to-work initiatives that are "not widely emphasized" in Tech-Prep implementation are those not required under the Perkins Act.

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cooperation with area businesses, were including workplace activities. As congressional support for the STWOA became evident, many states and communities began to modify components of their Tech-Prep initiatives in anticipation of new requirements and expected funding under the STWOA. In some states, Tech-Prep consortia are currently the organizational structure for new school-to-work partnerships and, in many others, Tech-Prep program features and personnel are the building blocks for new school-to-work systems.[1]

B. AVAILABLE DATA ON LOCAL IMPLEMENTATION

Policymakers have grown increasingly interested in the progress of Tech-Prep and school-to-work initiatives. Some research has been conducted into the implementation approaches of practitioners in select locations. With changes in federal funding of state and local education reforms imminent, however, information on the status of implementation is needed on a national scale. Obtaining early data on school-to-work development is currently a priority for ED, DOL, and the national School-to-Work Office.

Evaluation of School-to-Work Implementation Grants

In passing both laws, the U.S. Congress required the administering federal agencies to conduct national evaluations. These agencies awarded a contract in September 1995 for a national evaluation of School-to-Work Implementation. The evaluation, which is being conducted by Mathematica Policy Research, Inc., (MPR) is examining the implementation of state and local grants funded under the STWOA.[2] Specifically, the evaluation is examining (1) implementation of school-based, work-based, and connecting activity components; (2) access and participation by schools, students, and employers; and (3) student experiences in education and employment. This assessment will be based on a three-year survey of all local partnerships funded by the STWOA, case studies of selected states and partnerships, and a study of student high school and postsecondary experiences in 32 randomly selected partnerships in eight states. The earliest survey data on national school-to-work implementation will be available in fall 1997.

Evaluation of the Tech-Prep Education Program

National data on Tech-Prep development are already providing useful information to ED on the implementation status of this initiative. Mathematica Policy Research, Inc., (MPR) and its subcontractor, Northwest Regional Education Laboratory, have been conducting the national Evaluation of the Tech-Prep Education Program since October 1992. This evaluation has two primary objectives. First, it is describing Tech-Prep programs funded under the Perkins Act--documenting the number of programs, their characteristics, the institutions involved, the populations they serve, and their planning and implementation activities. Second, it is identifying effective practices to provide guidance to other program consortia.

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[1]This information was obtained through discussions with school-to-work directors in the 27 states that have received STWOA implementation grants.

[2]Subcontractors for the national school-to-work evaluation are MPR Associates, Inc., and Decision Information Resources, Inc.

One component of this evaluation is an annual survey of all local Tech-Prep consortia, beginning in fall 1993 and continuing through fall 1996. Data from the fall 1993 and fall 1994 surveys have already been analyzed and two reports have been produced documenting the implementation status of Tech-Prep consortia and the progress made between 1993 and 1994.[3]

Use of Tech-Prep Data for Preliminary Examination of School-to-Work Development

Data on Tech-Prep implementation can be used to document some aspects of early school-to-work progress under way in local communities. Tech-Prep and school-to-work include similar elements and objectives, as described earlier. Thus, the questionnaire administered for the annual survey of local Tech-Prep consortia includes items that overlap with many school-to-work components--even some not emphasized in the Tech-Prep Education Act. Questions on business involvement in consortium activities and the availability of workplace experiences were included from the start, because prior research identified these areas as important for some Tech-Prep consortia. In late spring 1994, after the STWOA was passed, ED asked MPR to add questions to the Tech-Prep survey that would provide a more comprehensive picture of school-to-work implementation and issues in Tech-Prep communities before a national evaluation of the new initiative.

The Tech-Prep data are particularly relevant for assessing early national school-to-work progress, because they illustrate reform activity in a substantial number of communities around the country. The close to 1,000 Tech-Prep consortia operating in 1994 included more than half of all U.S. school districts and three-quarters of all U.S. secondary students. Moreover, most two-year community and technical colleges, as well as a growing number of four-year institutions, are members of Tech-Prep consortia. High response rates to the Tech-Prep surveys and the significant "coverage" of consortia provide a credible, national picture of school-to-work implementation within the Tech-Prep framework.

There are some limitations to using the Tech-Prep data to document early school-to-work development, however. The groupings of districts, postsecondary institutions, businesses, and other organizations that make up current Tech-Prep consortia may not be identical to those funded under the STWOA. Moreover, Tech-Prep consortia did not start out with a federal or state mandate to implement the full range of school-to-work components. Most are in states that had not received STWOA implementation grants before the fall 1994 survey and thus may have lacked the motivation or support to push forward with some of the new elements. Finally, the definition and description of key STWOA components have been evolving. At the time of the Tech-Prep survey, some Tech-Prep staff may have been unfamiliar with STWOA concepts or terms, such as skill certificates.

C. ORGANIZATION OF THIS REPORT

This report uses data from the Tech-Prep survey to describe how Tech-Prep consortia are already following practices or developing program features envisioned in the STWOA. Each of the remaining chapters discusses one of the three fundamental components specified in the STWOA: (1) school-based learning; (2) work-based learning; (3) and connecting activities.

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[3]The 1993 and 1994 surveys achieved response rates of 86 and 91 percent, respectively.

II. SCHOOL-BASED LEARNING

The school-based learning component of the school-to-work model is expected to affect students in several important ways. First, students receive career guidance that exposes them to a broad range of occupational opportunities and helps them to identify career interests. Second, students choose a career major that determines their academic and vocational program of study during at least their secondary years. Third, students become more engaged in learning and acquire skills more readily, as a result of improved teaching methods emphasizing hands-on, student-centered learning that is relevant to students' lives, career interests, and workplace experiences. Fourth, systematic activities and arrangements at the secondary level promote student entry into postsecondary education and training. Finally, students receive an industry-recognized credential certifying their mastery of skills and competencies required for their career objective.

Although Tech-Prep consortia are not currently required by law to include all of these school-to-work elements, documenting the extent to which they have begun implementing these key elements, or have expanded them, provides some preliminary indication of initial school-to-work development in Tech-Prep communities.

A. CAREER EXPLORATION AND COUNSELING

Career development activities are generally considered critical to the success of school-to-work and Tech-Prep reforms. Both models call for students to make important choices during high school--selecting a career cluster or major, perhaps choosing an occupational specialty, and planning for postsecondary education or training. Students must be able to identify their interests and abilities, as well as formulate occupational goals on the basis of clear information about career options.

Currently, career counseling and career development activities may be provided in one of three ways: (1) as a required component for Tech-Prep students specifically; (2) integrated into regular school courses or activities and required of all students; or (3) made generally available to any student who wishes to use them. Ideally, career development activities would be universally available as part of a school-to-work system.

Data from the Tech-Prep surveys can help us to address three questions about the status of career exploration and counseling:

1. How consistently are career development activities implemented?

2. What are the most common methods for delivering career development services?

3. Are middle schools promoting career awareness in Tech-Prep communities?

The definition and delivery of career development activities are likely to vary among individual districts and schools

An important issue concerning career development and counseling in school-to-work systems is how consistently and universally they will be provided. Evidence from the Tech-Prep surveys suggest that the emphasis on and approach to career guidance vary from school to school; creating a Tech-Prep consortium or school-to-work partnership may not greatly affect which strategies local districts adopt. Fewer than half of Tech-Prep consortia implemented specific career development activities consortiumwide--that is, in all member schools (Table II.1).

Individual career counseling is the most widespread career development activity but is not universally available

Schools currently deliver career awareness and counseling services in a variety of ways. Among Tech-Prep consortia, the most common forms at the secondary level are career exploration software, career activities integrated into academic or vocational classes, and, particularly, individual counseling. About 90 percent of the 867 Tech-Prep consortia conduct individual career counseling sessions in at least some of their member high schools. Only 52 percent of all consortia, however, report implementing these activities in *all* of their participating high schools--or a total of 3,476 secondary schools (Table II.1).

Some middle schools are already implementing the types of career exploration activities the STWOA promotes

The STWOA requires eligible partnerships to begin providing students with career awareness experiences, exploration, and counseling at the earliest possible age, but no later than seventh grade, to help students develop career goals and select career majors. This provision underscores the important role middle schools and junior high schools can play in a school-to-work system.

Tech-Prep consortia report that some middle schools are already engaged in providing career development activities (Table II.1). About one-quarter to one-third of Tech-Prep consortia report that all middle schools in their communities are offering some type of career awareness experiences to younger students. As at the secondary level, the most common type of career development activity is individual counseling.

The emphasis on career development may be growing

The STWOA's emphasis on career awareness and exploration will probably stimulate Tech-Prep consortium schools that have not been focusing on these elements to start doing so. There is some evidence from the fall 1993 and fall 1994 Tech-Prep surveys that individual career guidance and career awareness classes have become more prevalent components of Tech-Prep core programs. In 1994, more than 80 percent of the consortia defining a required set of core activities for all Tech-Prep

TABLE II.1

CONSORTIA PROVIDING CAREER DEVELOPMENT ACTIVITIES AT ALL MEMBER SCHOOLS

	Grade 8 or Earlier		Grades 9 to 12		Postsecondary Level		Total	
Type of Activity	Number of Consortia	Percentage	Number of Consortia	Percentage	Number of Consortia	Percentage	Number of Consortia	Percentage
Special Career Development Classes	185	26	207	27	262	38	431	50
Career Development Integrated in Academic or Vocational Classes	180	26	319	40	305	44	481	56
Individual Counseling	244	36	416	52	455	61	610	70
Special Tech-Prep Counseling Materials	138	19	230	30	138	20	295	34
Development of Secondary/ Postsecondary Student Plans	148	20	278	34	244	34	382	44
Career Exploration Software	183	27	332	43	404	57	539	62
Trips to Work Sites	78	12	176	22	253	38	344	40
Job Placement by Course Instructors	n.a.	n.a.	143	20	314	45	359	41
Job Placement by Guidance Counselors	n.a.	n.a.	136	19	254	37	296	34
Job Placement by Special Placement Staff	n.a.	n.a.	90	13	340	49	375	43
Other	8	1	4	1	5	1	8	1

SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1994.

n.a. = not applicable.

students included career development experiences in their program model, compared with 75 percent a year earlier.[1]

B. SELECTION OF A CAREER MAJOR

Encouraging students to choose and follow a sequence of academic and vocational courses that prepares them for an identified career is an important element of the STWOA, but the concept is not unique to school-to-work. The Tech-Prep model includes a similar feature, in which each Tech-Prep program or program of study reflects a defined, occupationally relevant course sequence. Some Tech-Prep models offer narrowly defined programs of study geared toward particular occupational specialties; some provide broad career clusters--groupings of programs of study that prepare students for related occupations--that can be selected as a first step toward more focused career preparation. Students' enrollment in or choice of a Tech-Prep program can, in some communities, be equivalent to selecting a career major, as defined in the STWOA.

The Tech-Prep evaluation surveys examined the implementation of this important component in Tech-Prep communities. The surveys asked consortium coordinators several questions about the extent to which students choose a career cluster or specific occupational program that determines *both* their academic and vocational course options. Their responses can be used to address five questions:

1. To what extent are career-oriented programs of study available in Tech-Prep consortium districts? How did this availability change between 1993 and 1994?

2. In what career areas or clusters are these programs of study offered?

3. Is choosing an occupational program of study a fundamental part of the Tech-Prep experience?

4. At what grade level do Tech-Prep students usually choose a career cluster or major?

5. How consistently are career clusters defined?

Career-focused programs of study are common

Most consortia report offering either broadly defined career clusters or more narrowly focused programs of study to guide students' choices of academic and vocational courses. In 1994, slightly

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[1]The proportion of consortia actually requiring and implementing career development activities for all Tech-Prep students in these years was likely to be less than the reported levels, however. As many as a quarter of the responses to the relevant survey item may reflect program goals rather than actual program operation. We have no reason to believe that this type of response inflation would be greater in fall 1994 than in fall 1993, however. Thus, the observed increase in emphasis on career development activities is likely to be real.

more than two-thirds of consortia reported that the students they consider Tech-Prep participants choose and follow an occupational cluster or program in at least one consortium district.

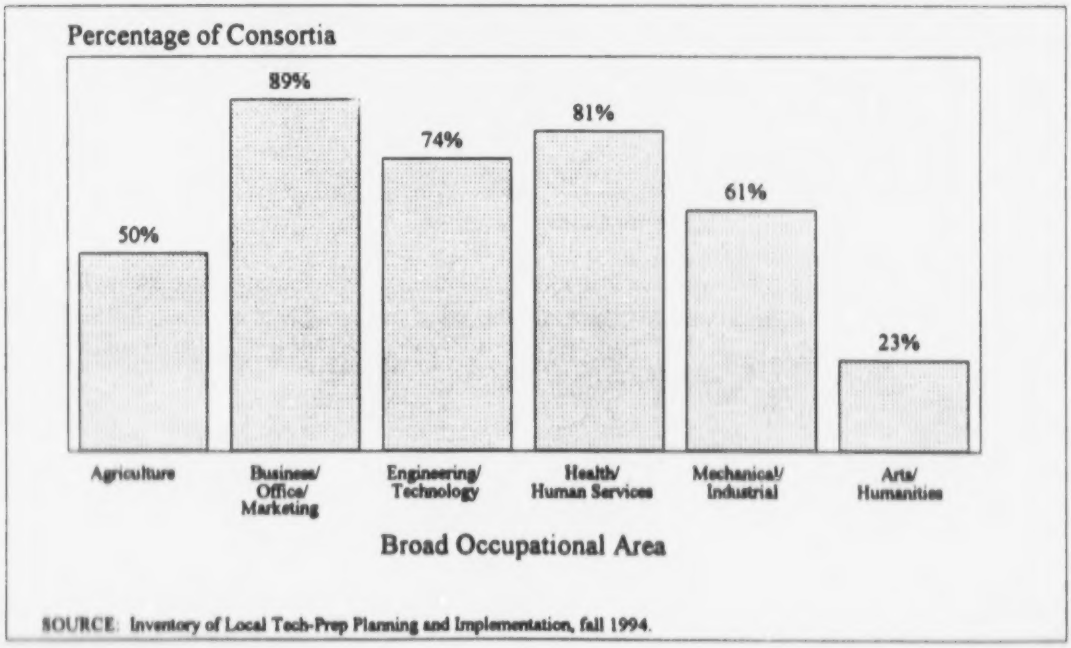
Expansion in the reported use of programs of study has been limited, however. An identical proportion of consortia reported defining and using career clusters in 1993 and 1994. Moreover, within consortia, growth in the number of districts offering career-oriented programs of study has been uneven. Among consortia that responded to both years of the survey, only about 30 percent reported implementing programs of study in more districts in 1994 than in 1993. On the other hand, just under one-quarter offered career clusters in fewer districts in 1994; almost half offered them in the same number of districts in both years. A total of 2,748 districts implemented these programs of study in 1994.

Programs of study are most frequently defined for business, engineering/technology, and health and human services

Tech-Prep consortia report offering programs of study in areas as broad as human services and as narrow as restaurant management. Programs of study are also offered across most of the common classifications for career clusters. If we group together the more narrowly defined titles recorded by consortium coordinators, the survey data indicate that the most commonly implemented career clusters involve business, office skills, and marketing (Figure II.1). There has been little change in this pattern. In both 1993 and 1994, close to 90 percent of all consortia with occupational programs of study defined at least one program that could be included in this broad business category. Programs of study in engineering/technology and health and human services were also common in both years.

FIGURE II.1

CONSORTIA WITH SPECIFIED CAREER CLUSTERS



SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1994.

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Many consortia view choice of a career cluster as a critical step in Tech-Prep participation

The survey data suggest that most consortia view choosing and following a career-focused program of study as a Tech-Prep key element. In 1994, almost 400 consortia reported that selecting a career cluster is a core part of their Tech-Prep initiative, similar to the "career majors" approach the STWOA promotes. These reports probably overstate the extent of this component's implementation, however. Some consortia that report requiring students to choose a career cluster are undoubtedly documenting program objectives rather than established Tech-Prep components. A sizable number of consortia report conflicting information. About 20 percent of the consortia that reported requiring students to choose a career-focused program of study (77 of 384) do not, according to another survey question, currently have defined programs of study or students involved in them.

Selection of a career cluster most frequently occurs before 11th grade

The STWOA requires communities to encourage student selection of a career-focused program of study (career major) in 11th grade or earlier. The Tech-Prep data show that many communities ask students to make at least a tentative choice at an earlier point. Among consortia that expect students to choose a career cluster as part of the Tech-Prep program design, most report that they have students choose in eighth grade (26 percent) or ninth grade (34 percent). Choices made in 10th and 11th grade are less common (18 percent and 17 percent, respectively).

This distribution probably reflects considerable variation in how consortia define a career cluster or program of study. In many communities, 8th or 9th graders must decide (with the help of their parents) whether to attend a comprehensive high school, vocational high school, or regional vocational center; such choices may be based on a preliminary identification of a career interest by the students. In other communities, students leaving middle school are asked about their career interests as input into scheduling high school courses. In both cases, the choice may have little real impact on students' course selection in the early years of high school, but the declaration of a tentative career focus and the intent to use this information to structure courses may be interpreted by consortia as the equivalent of a defined program of study.

Definition and use of career clusters undoubtedly vary significantly

Strategies for implementing career-focused programs of study in school-to-work initiatives are likely to vary, just as those adopted and documented by Tech-Prep consortia do. On the basis of information from both the national Tech-Prep survey and on-site observation of local Tech-Prep consortia, communities' understanding of the concept of such programs of study varies widely. Nearly 20 percent of consortia in each year of the survey did not use the broad labels, such as health/human services and engineering/technology, suggested in the questionnaire to describe their career clusters. Instead, they wrote in quite specific cluster titles, such as building construction, child care, broadcasting, computer-assisted design, and occupational home economics. We question whether these narrow titles refer to programs of study that specify both academic and vocational courses in an articulated program or simply refer to traditional vocational courses. Although counselors and vocational teachers in some schools do recommend that students interested in completing a vocational program take specific academic courses, our experience suggests that this advice is usually provided ad hoc, and students can choose not to enroll in the recommended, relevant courses.

Moreover, as discussed earlier, many communities ask students to identify career interests tentatively at the end of eighth grade or early in ninth grade and, to some extent, encourage counselors to incorporate these early expressions of interest into student course scheduling. Some communities may consider this activity to be student selection of a career-related program of study. In fact, however, the process of eliciting students' interests may be relatively casual, and students may not even be aware of the link between their interests and the courses they take. Unfortunately, the Tech-Prep survey data do not allow us to evaluate fully the extent to which career-related course sequences are actually defined and how much students understand them.

C. IMPLEMENTATION AND INTEGRATION OF ACADEMIC AND VOCATIONAL EDUCATION

A rigorous program of instruction and curriculum that integrates academic and vocational learning and is determined by students' choice of career cluster or major is fundamental to both Tech-Prep and school-to-work. New kinds of teaching methodologies and curriculum frameworks are being used to offer students contextual learning approaches--teaching concepts as they are applied in real life and the world of work, through hands-on problem-solving activities and exercises. Outdated vocational curricula are being revised to prepare students for more creative thinking and to reinforce basic skills and more advanced academic principles. Whereas Tech-Prep efforts may have focused more narrowly on individual specialized programs of study and courses, the STWOA promotes the broad availability of the new courses, linked in sequences around career themes.

The Tech-Prep survey explored two areas of curriculum development and integration. Specifically, the data can address three issues:

1. To what extent have Tech-Prep communities implemented academic curricula that emphasize contextual or applied learning strategies?

2. Are occupational-technical courses being developed or updated?

3. In which fields are the development and updating of technical courses most common?

Almost all consortia have recently made some efforts to develop and implement applied academic curricula

Evidence from the Tech-Prep survey indicates that some communities are already familiar with applied academic curricula--one form of academic and vocational integration on which school-to-work systems can be built. The data document the recent implementation within most consortia of academic curricula that emphasize contextual or applied learning. In the past two or three years, more than 92 percent of all consortia have introduced applied academic curricula that were either developed at the state or local level, or, more commonly, even purchased from commercial vendors.

New applied curricula are currently available in a relatively small proportion of schools

The Tech-Prep data suggest that communities still have a long way to go before implementing applied academic curricula systemwide. Despite substantial consortium commitment to new applied curricula, actual implementation among secondary and postsecondary schools is not widespread. Even among consortia that report using CORD's Applied Math curriculum--seemingly the most popular of the commercially available curricula--only slightly more than a third of their secondary schools are currently using the curriculum (Table II.2). Use of applied academic curricula, whether purchased from vendors or developed at the state or local level, in subject areas other than mathematics is even less common. Moreover, data collected on-site at some Tech-Prep consortia suggest that many schools offer only one or two sections of these applied courses.

Many consortia have recently revised or introduced new occupational-technical curricula

To meet the demands of the labor market for entry-level workers with good critical thinking, problem-solving, and technical skills, many schools need to update old vocational curricula and develop new occupational curricula and courses that can be incorporated into school-to-work systems. Some of this activity is already taking place in Tech-Prep communities. About 65 percent of all Tech-Prep consortia reported that, between 1991 and 1994, at least one secondary or postsecondary school in the consortium had implemented new occupational-technical courses or substantially revised existing courses to emphasize new instructional methods (for example, competency-based learning) or instruction in more advanced skills. The extent to which these new curricula have been adopted by consortium schools is unknown, however, because consortia were not asked to report the number of schools implementing such curricula.

The data suggest that developing or revising technical curricula is generally not a priority in the early years of Tech-Prep implementation. Consortia that received their first Title III-E grant in FY 1992 were significantly more likely (72 percent) than those that received their first grant in either FY 1993 (57 percent) or FY 1994 (49 percent) to be implementing new or updated occupational-technical curricula. This outcome may also foreshadow a lack of focus on such curricula in early school-to-work development. School-to-work partnerships may emphasize the development of new applied academic curricula over occupational-technical curricula, as did Tech-Prep consortia in the first few years of planning and implementation. Moreover, because many schools have already updated some technical curricula as part of Tech-Prep, school-to-work partnerships may choose to focus resources on other school-to-work components.

Emphasis on development of occupational curricula follows a pattern similar to that of career clusters

Consortia have emphasized technical curriculum activity in the same occupational areas in which they report offering career-oriented programs of study (Figure II.2). For example, just as business, office skills, and marketing represented the most commonly defined career cluster or major, vocational-technical curricula in these occupational fields have been the focus of recent curriculum revision and development efforts.

TABLE II.2

RECENTLY INTRODUCED COMMERCIAL APPLIED ACADEMIC CURRICULA

	Consortia		Secondary Schools		Postsecondary Schools[a]	
Subject Area	Number	Percentage	Number	Percentage[b]	Number	Percentage[b]
Applied Biology/Chemistry	422	49	1,266	13	49	4
Applied Communications	572	66	2,469	26	125	10
Applied Economics	104	12	367	4	10	1
Applied Mathematics	675	78	3,663	38	175	14
Chemistry in the Community	90	10	177	2	10	1
Principles of Technology	556	64	1,888	20	115	9
Other	35	4	102	1	11	1
None	112	13	--	--	--	--

SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1994.

[a]Incudes community and technical colleges, four-year colleges and universities, proprietary schools, and registered apprenticeship programs in each reporting consortium.

[b]The denominators used in calculating the percentages are the sums of the reported number of secondary schools and postsecondary schools, respectively, in consortia implementing applied curricula in the specified subject area.

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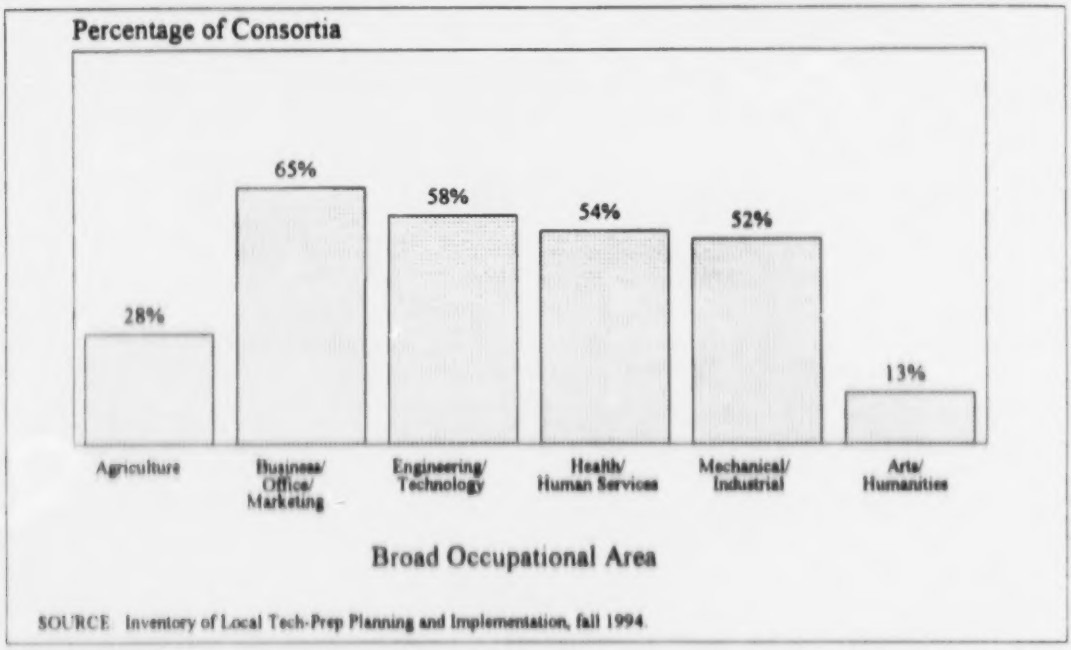
FIGURE II.2

RECENT IMPLEMENTATION OF NEW OCCUPATIONAL-TECHNICAL CURRICULA AT THE SECONDARY LEVEL, BY BROAD OCCUPATIONAL AREA



SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1994.

D. FACILITATING ENTRY INTO POSTSECONDARY EDUCATION AND TRAINING

The primary goal of school-to-work reforms is to promote students' successful entry into career-oriented employment. One approach to improving the transition of young people from school to work involves encouraging them to pursue advanced training and education at the postsecondary level. Tech-Prep efforts in this area have focused on articulating secondary and postsecondary institutions' courses and programs, to ease the transfer of students to college or apprenticeships and to prevent delays and duplication of course work and credit. Some Tech-Prep consortia have also required students to develop educational plans that include tentative postsecondary choices, to encourage early postsecondary planning. These approaches and the existing articulation agreements in Tech-Prep communities are likely to be building blocks for school-to-work systems in some local partnerships.

The Tech-Prep surveys document the implementation of these approaches to facilitating postsecondary transitions and allow us to address two issues:

1. To what extent have articulation agreements been signed?

2. How important is postsecondary planning in Tech-Prep activities?

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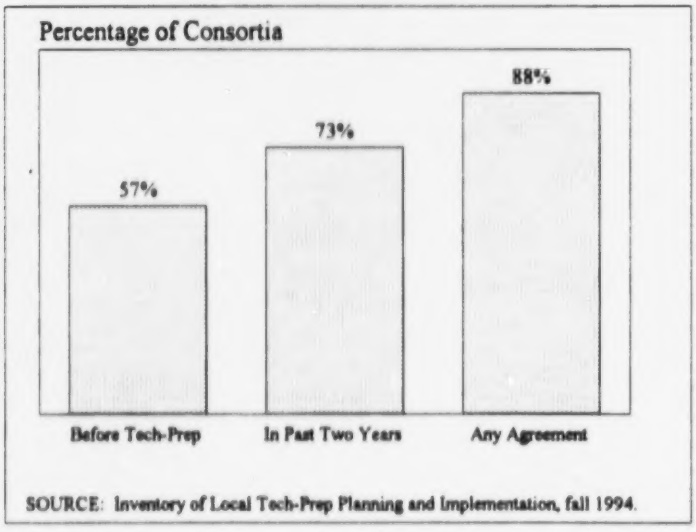
Articulation agreements have been established in many communities

School-to-work planners in many areas of the country will have the benefits of established agreements. By fall 1994, close to 90 percent of Tech-Prep consortia had signed articulation agreements between local secondary and postsecondary institutions (Figure II.3).[2] Many communities had developed articulation agreements even before the Tech-Prep consortium was formally established. In addition, recent Tech-Prep activity reflects continued emphasis on articulation. Nearly three-quarters of consortia have signed new agreements in the past two or three years, some working on articulation for the first time and others expanding agreements into new occupational areas or schools.

FIGURE II.3

CONSORTIA WITH ARTICULATION AGREEMENTS SIGNED PRIOR TO TECH-PREP IMPLEMENTATION AND WITHIN THE PAST SEVERAL YEARS



SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1994.

Many postsecondary institutions are already involved in articulation efforts

Two-year colleges that join school-to-work partnerships will most likely bring with them a familiarity with secondary-postsecondary articulation and a set of valuable institutional relationships. Consortia with signed articulation agreements reported a total of 1,300 postsecondary institutions as partners

[2]The Tech-Prep Education Act requires consortia to operate their Tech-Prep programs under articulation agreements. The 10 percent of consortia that did not report having signed agreements may be in the process of developing such agreements; most were new grantees.

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in these agreements. This figure represents nearly all of the two-year institutions that were members of these consortia and suggests that Tech-Prep has affected most of the nation's community colleges.[3]

Secondary-postsecondary planning is a key Tech-Prep activity

In-addition to signing articulation agreements, many consortia promote postsecondary enrollment by helping students develop comprehensive educational plans. Close to 80 percent of the consortia that define their core program activities require students to complete plans that identify a career interest and the likely secondary and postsecondary courses that best prepare them for their career goal.

E. SKILL CERTIFICATES

A common objective of the STWOA and Tech-Prep Education Act is to help students acquire high level academic and technical skills. The STWOA promotes the awarding of a special industry-recognized credential--a skill certificate--to document students' mastery of key competencies required for specified entry-level jobs. Although efforts are under way to develop skill standards and certificates at the national level in some occupational areas, these efforts are not yet completed and do not cover the full range of occupations. In the meantime, the STWOA encourages local school-to-work initiatives to develop their own skill certificates, with input from employer partners. These credentials are not included in the Tech-Prep model, but some consortia that are moving toward school-to-work implementation have begun the process of creating them.

ED asked MPR to collect early baseline information about the status of skill certificate implementation from Tech-Prep consortia. The questions emphasized the distinction between a credential that documents specific skills that can be used as evidence of qualifications for potential employers and a traditional high school diploma. New items added to the fall 1994 survey questionnaire addressed four key issues:

1. How extensively are skill certificates being introduced in Tech-Prep communities?
2. When are they awarded?
3. What types of skills or outcomes do the certificates most frequently record?
4. Which individuals or organizations authorize or validate the certificates?

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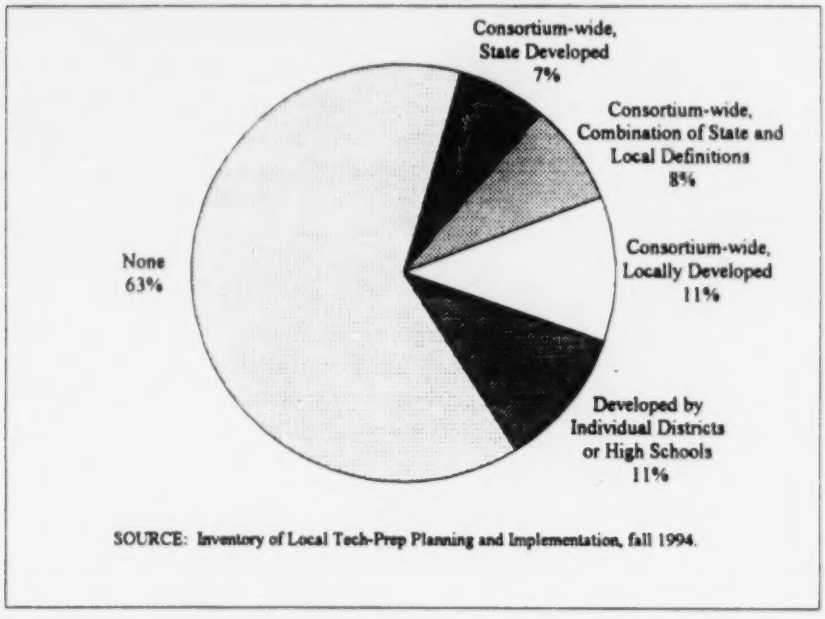
[3]Some postsecondary institutions develop agreements with districts or schools in multiple consortia. Thus, the reported total number of postsecondary institutions involved in articulation agreements--1,300--is probably not an unduplicated count. The actual number of postsecondary institutions involved in articulation is probably somewhat lower.

Procedures for certifying students' skills have so far not been widely adopted

Unlike other components of the school-to-work model, skill certificates were never emphasized in the Tech-Prep legislation. It is not surprising that, in fall 1994, relatively few consortia had a process for assessing particular skills and recording the attainment of these skills on a certificate that could be used to document qualifications for potential employers (Figure II.4). Only about a third of all consortia report awarding credentials to some students in at least one of their consortium schools; some may be including standard community college degrees or certificates in their reporting of a skill certificate process.

FIGURE II.4

IMPLEMENTATION OF SKILL CERTIFICATES


Consortium-wide, State Developed 7%
Consortium-wide, Combination of State and Local Definitions 8%
Consortium-wide, Locally Developed 11%
Developed by Individual Districts or High Schools 11%
None 63%

SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1994.

States do not appear to be playing a significant role in developing skill certificates. About half of the consortia that do certify skills--or about 15 percent of all consortia--report that the state had input into the process of defining the credentials.

Certificates are most frequently awarded at the secondary level

Communities with an approach to certifying students' skills usually award the credential when students complete high school. Among the consortia that document students' skills, more than three-quarters provide a certificate at high school graduation. In comparison, slightly more than 20 percent of these consortia award a certificate as skills are attained; about 45 percent do so at the completion of postsecondary education or training (Figure II.5). Some communities award skill certificates at the completion of both the secondary and postsecondary levels (35 percent of the consortia that award certificates).

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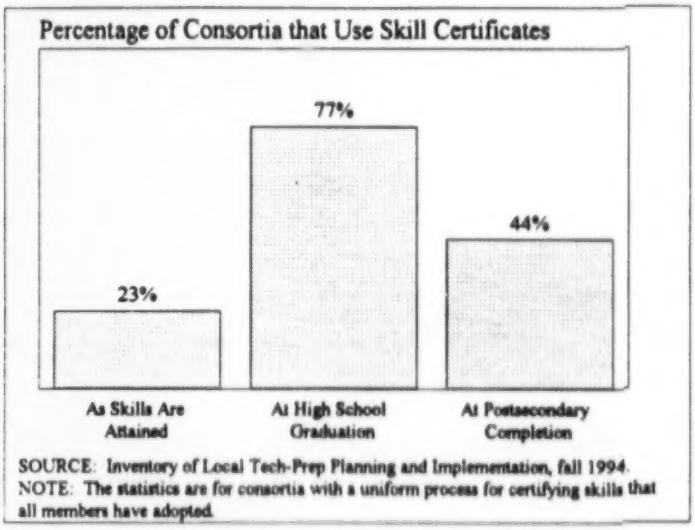
FIGURE II.5

POINT AT WHICH SKILL CERTIFICATES ARE AWARDED



SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1994.
NOTE: The statistics are for consortia with a uniform process for certifying skills that all members have adopted.

The greater availability of certificates for secondary-level skill development may reflect two factors. First, new school-to-work activity is currently focusing on the secondary level. Thus, updated occupational curricula and work-based learning experiences--which can both provide opportunities for acquiring new, documentable skills--are currently more likely to be implemented for high school students than for those at postsecondary institutions. Second, many of the secondary skill certificates reported by Tech-Prep consortia may be no different from those given to secondary vocational course completers in some communities. Some regional or area vocational centers and some vocational programs in comprehensive high schools began awarding skill certificates even before the STWOA was being debated.

Technical competencies and program completion are the most common outcomes documented in skill certificates

Skill certificates can contain many different elements, depending on the scope, objectives, and career focus of the program. For example, special credentials awarded for completion of a two-year comprehensive youth apprenticeship program might contain the title of the occupation for which the student has been prepared, academic and technical skills attained, and time spent at the workplace. In contrast, certificates awarded to vocational course completers are more likely to document only technical skills. The Tech-Prep survey data indicate that most skill certificates contain, at a minimum, a list of the occupationally relevant technical skills the student mastered, and the fact that the student completed an occupational program (Figure II.6). Only about half the consortia that award skill certificates list academic skills in the certificates.

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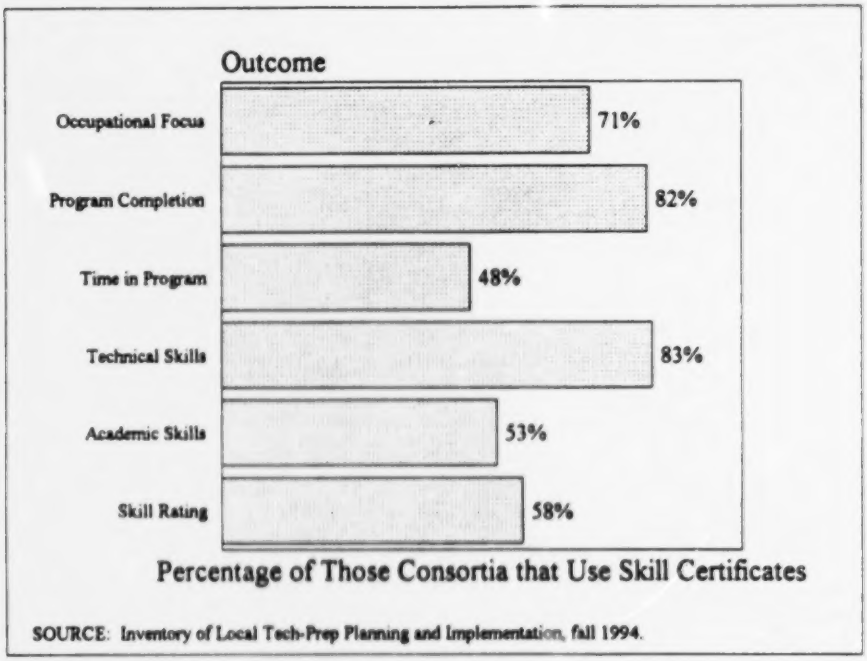
FIGURE II.6

OUTCOMES DOCUMENTED IN SKILL CERTIFICATES



SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1994.

School staff, rather than employers, usually approve students' mastery of skills

Valid skill certificates require an individual or group of individuals to evaluate and sign off on students' attainment of identified competencies. These two activities--the assessment and final ratification--may be completed by different people or institutions, but the approval of each is often documented.

At least among communities in the Tech-Prep consortia that award skill certificates, educators are most likely to verify student competencies (Figure II.7). Nearly three-quarters of the 222 consortia that award skill certificates report that the signature of an individual from the student's school is included; in contrast, only one-quarter of consortia report including an employer's signature or approval in the certificate. This outcome provides even stronger evidence that the skill certificates Tech-Prep consortia award may be associated with traditional vocational education completion rather than with more comprehensive work-based learning programs, in which employer assessment and input are considered critical.

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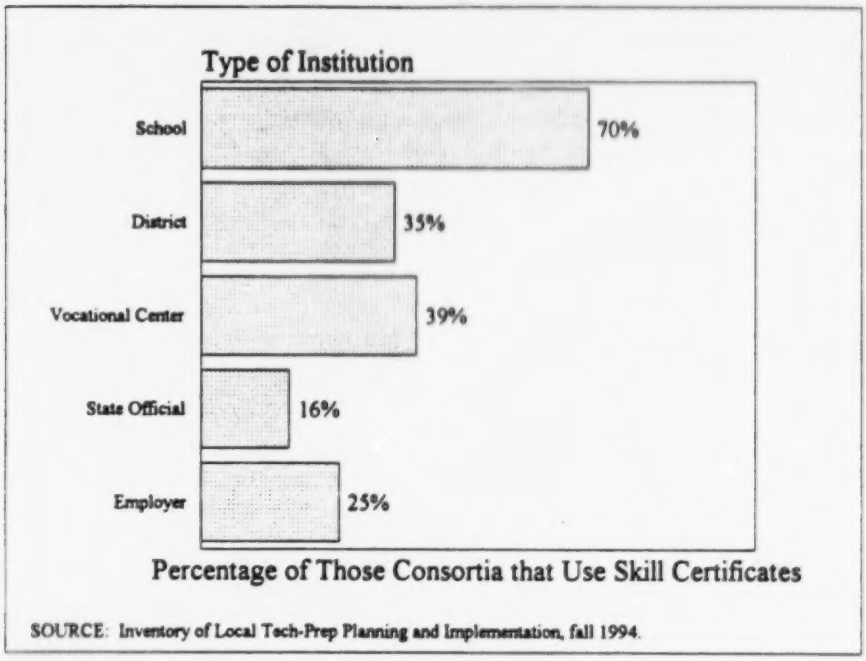
FIGURE II.7

APPROVAL RESPONSIBILITY FOR SKILL CERTIFICATES



SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1994.

F. PARTICIPATION IN SCHOOL-BASED ACTIVITIES

The overall number of Tech-Prep students can provide some measure of the level of participation in the school-based components of the broader school-to-work model. For the most part, consortia define Tech-Prep participation on the basis of student involvement in such school activities as choosing a Tech-Prep program of study, developing secondary-postsecondary career/educational plans, and enrolling in applied academic and articulated vocational courses. The STWOA identifies the same or very similar school-based components as important.

The Tech-Prep surveys allow us to answer two questions about participation in these school activities:

1. To what extent are Tech-Prep students involved in the kinds of school activities that are likely to be included in school-to-work initiatives?

2. Is participation in these activities growing?

More than 400,000 students participate in school-based activities that are part of the school-to-work model

In the 1993-1994 school year, consortia that could count Tech-Prep students reported a total of 432,000 participants. Although the definition of which students could be considered as "in Tech-Prep" was formulated by individual consortia and varied considerably, all of the students took part

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in at least one of the key school elements the STWOA advocates. For example, 77 percent of the Tech-Prep participants (332,692) reportedly developed an individual educational/career plan, indicating a planned course sequence that spans the secondary and postsecondary levels. More than 90 percent of the students (388,861) were enrolled in one or more articulated or unarticulated vocational courses. Fewer students (approximately 60 percent, or 259,240) took applied academic courses. Clearly, some students were involved in multiple school-based components.

The actual level of participation for STWOA school-based activities in 1994 is likely to be larger than that reported for Tech-Prep students, for two reasons. First, some Tech-Prep consortia were unable to document the number of participating students. Second, counts of Tech-Prep participants may not include students involved in other school-based reforms on which school-to-work initiatives are being built--such as career academies, youth apprenticeship, and cooperative education.

Reported levels of participation in school-to-work school activities rose significantly between the 1992-1993 and 1993-1994 school years

Reported participation in at least some of the school-based activities of the type envisioned in the STWOA rose by between 50 percent and 150 percent in one year. In the 1993-1994 school year, consortia reported 432,000 Tech-Prep participants, a 150 percent increase over the 173,000 participants a year earlier. This observed growth reflects two factors: (1) more consortia enrolled students in key school-based activities that they called "Tech-Prep"; and (2) more consortia were able to document how many students were participating in these activities. Holding changes in reporting capacity constant yields a growth rate closer to 50 percent. Thus, the true growth in participation in school-to-work, school-based activities is undoubtedly lower than the 150 percent reported for the overall survey samples.

III. WORK-BASED LEARNING

Tech-Prep and school-to-work efforts share a common objective: to facilitate students' entry into career-oriented employment. Although the Tech-Prep legislation was designed to promote successful student transitions to work after completion of a Tech-Prep program, many consortia now consider workplace experiences during school a useful feature and natural extension of their Tech-Prep programs. The grants available under the STWOA to expand work-based learning systems are encouraging Tech-Prep consortia to turn their attention to this school-to-work component. Tracking the extent to which consortia offer workplace opportunities and Tech-Prep students participate in them provides an early measure of school-to-work implementation progress in Tech-Prep communities.

A. AVAILABILITY OF WORKPLACE OPPORTUNITIES FOR STUDENTS

Communities in Tech-Prep consortia can provide work-site experiences to Tech-Prep students in two ways. First, some rely on existing cooperative education, work-study, or other work-based learning programs as a structure for making work experiences generally available to interested students; Tech-Prep students can choose to participate in these programs. Second, other communities focus resources on developing the capacity to place particular groups of students at a work site as part of a Tech-Prep program and consider participation in these work-site activities a core part of the Tech-Prep experience.

The Tech-Prep annual survey provides information about both of these approaches to providing workplace opportunities for Tech-Prep students. Specifically, it addresses the following three issues:

1. To what extent do consortia make workplace experiences available to Tech-Prep students?

2. Did the availability of specific types of workplace activities change?

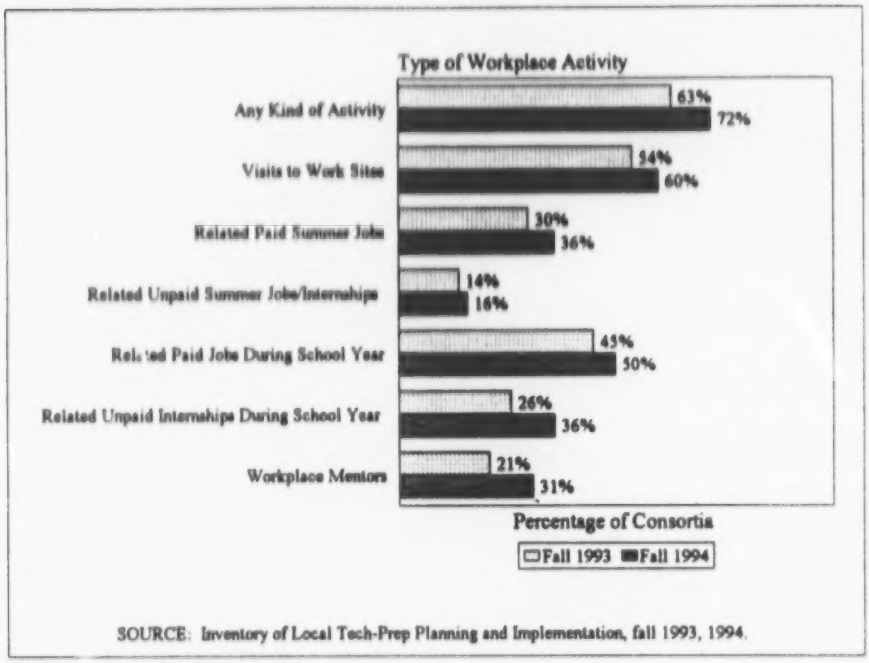
3. Are workplace activities a fundamental part of Tech-Prep participation?

Workplace opportunities are available at some level in most Tech-Prep consortia

Many consortia offered workplace activities to Tech-Prep students and sometimes other students. In fall 1994, about six months after the STWOA became law, almost three-quarters of the consortia (619 out of 867) made some type of workplace experience available in at least one member district (Figure III.1). These experiences ranged from occasional activities, such as visits to employers or assignment to and interaction with workplace mentors, to activities requiring more intensive employer commitments, such as paid part-time jobs during the summer or school year.

FIGURE III.1

AVAILABILITY OF DIFFERENT WORKPLACE ACTIVITIES TO TECH-PREP STUDENTS, FALL 1993 AND 1994



SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1993, 1994.

Tech-Prep students' access to workplace experiences has increased

The passage of the STWOA has probably affected the extent to which Tech-Prep students can engage in workplace activities. A higher proportion of consortia made workplace activities possible for Tech-Prep students in 1994 than in 1993 (Figure III.1). In fall 1994, 72 percent of consortia reported making some type of workplace experience available in at least one member district, compared with 63 percent in fall 1993. Consortia that offered workplace activities in both 1993 and 1994 did so in a somewhat higher proportion of districts in 1994 (60 percent) than in 1993 (56 percent).

Older grantees were more likely to offer these experiences than more recent grantees, which suggests that implementing work-based activities may be part of a second stage of development for Tech-Prep consortia. For example, 79 percent of first-time FY 1992 grantees, 67 percent of FY 1993 grantees, and 52 percent of FY 1994 grantees made some kind of workplace experience available to Tech-Prep students in at least one district.

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All types of workplace activities were reportedly more widely available in 1994

All types of workplace opportunities for Tech-Prep students have expanded. The availability of each type of workplace activity except unpaid summer jobs (the least common workplace experience) rose by more than five percentage points among consortia (Figure III.1). The greatest increases occurred for school-year internships (up 10 percentage points) and assignment to workplace mentors (also up 10 percentage points). For each type of activity, most of the expansion resulted from greater availability among the older grantees in the year between 1993 and 1994.

Workplace experiences are offered inconsistently across consortium districts

Although many consortia made specific workplace activities available to students, they did so in a relatively small proportion of districts. For example, half of all consortia in fall 1994 (434) reported that paid part-time, school-year employment was available to Tech-Prep and other students, but these experiences were offered in only 42 percent of these consortia's districts (1,540 districts out of 3,650). Consortia offered most other types of workplace activities in even fewer districts. Only work-site visits were available in more than half of consortia's member districts (for those that offered workplace experiences).

Workplace activities are still not a core part of the Tech-Prep experience

A program that requires all Tech-Prep students to participate in workplace activities and develops the capacity to provide these students with work-site placements is more difficult to implement than a general program that helps interested students find positions and allows Tech-Prep students to participate. In fall 1994, a relatively high proportion of consortia reported viewing workplace experiences as a key component of Tech-Prep (290 of the 440 that reported on the characteristics of their core program). Some of these responses, however, reflected long-term ambitions rather than current program operations. About 23 percent of the consortia that reported workplace experiences as a core part of Tech-Prep did not, according to another survey question, actually make these experiences available that year.

Relatively few consortia in the 1994-1995 school year were actually implementing workplace experiences as a core Tech-Prep component. Of the 579 consortia in 1994 that made some type of workplace activity available to students and reported on the characteristics of their core program, only 205 (35 percent) considered involvement in workplace activities a part of the core Tech-Prep program. Fewer than one-quarter of the consortia that offered paid summer or school-year jobs made these experiences a requirement for Tech-Prep students.

These results probably indicate that, only six months after the STWOA became law and before most communities had received any STWOA funding, workplace activities in Tech-Prep districts were small-scale, voluntary, and largely uncoordinated with each other. Many of the 619 consortia that reported offering workplace experiences appear to have based their responses on the availability of existing, small work-based learning programs in a subset of their member districts, to which Tech-Prep students--like other students--had access. For example, consortia with at least one district offering a cooperative education program could legitimately have reported making workplace activities available.

B. PARTICIPATION IN WORKPLACE EXPERIENCES

The general availability of workplace activities in consortia and their member districts is not an accurate measure of Tech-Prep students' involvement in these activities. Many school districts offer work-study or cooperative education programs, but relatively few students participate. Analyzing actual levels of Tech-Prep student participation in different workplace experiences is an important step in examining the development of school-to-work systems, in which all students are expected to engage in some work-based learning.

Documenting Tech-Prep student involvement in workplace activities is difficult, however. In 1994, approximately half of all consortia did not identify and count the students participating in Tech-Prep reforms and could not be expected to report the number of these students in work-based learning experiences. Other consortia simply do not track workplace participation; although school's computer files may allow administrators to identify Tech-Prep students and to access records of their progress, the files do not usually document workplace experiences. These obstacles to recording student participation in work-based learning may be lessening somewhat, however. More Tech-Prep consortia have been able to report Tech-Prep participation (53 percent in 1994 versus 36 percent in 1993), and informal discussions with local and state Tech-Prep coordinators suggest that some communities may be developing systems to record student workplace experiences.

The survey data provide a baseline measure of student involvement in work-based learning for a specific population--Tech-Prep participants. The data can address three key issues:

1. To what extent are consortia able to report on Tech-Prep student involvement in workplace activities?

2. In which types of workplace experiences are Tech-Prep students involved?

3. What proportion of Tech-Prep students are participating in these activities?

Full documentation of Tech-Prep student participation in workplace experiences is relatively rare

Evidence from the fall 1994 survey underscores consortia's current difficulty in collecting information on the number of Tech-Prep students in workplace activities and portends obstacles school-to-work partnerships will probably face. Of the 619 consortia that reported making workplace experiences available for Tech-Prep students, only 175 (28 percent) were able to record consistently the number of Tech-Prep students participating in these experiences during the 1993-1994 school year.[1]

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[1]Responses to survey questions about the number of Tech-Prep students in workplace activities were carefully reviewed and screened for consistency. Approximately one-quarter of the questionnaires that included responses to the relevant questions contained inaccurate or invalid answers relating to workplace activities. For example, approximately 20 consortia reported the number of Tech-Prep students in workplace activities but indicated in other sections of the questionnaire that they were not able to identify and count Tech-Prep students. Another 10 to 20 consortia were eliminated from the computations because the number of Tech-Prep students they reported as participating in workplace activities in the 1993-1994

(continued...)

Approximately 53 percent of the 444 consortia that did not provide counts of Tech-Prep workplace participants were unable to identify the number of Tech-Prep students in the 1993-1994 school year and thus could not document those who were in workplace activities. The other 47 percent probably did not have procedures in place to track Tech-Prep students who were involved in these activities.

Even consortia that could document Tech-Prep workplace experiences had limited capabilities to do so. For example, the 144 consortia that reported the number of Tech-Prep students involved in work-site visits could do so for only 406 districts, about half of the 799 districts for which they had counts of Tech-Prep students, or about 30 percent of their 1,335 consortium districts overall (Table III.1). The proportion of consortium districts that could report on other types of workplace activities (such as summer jobs or assignment to a workplace mentor) was even smaller.

Development stage may affect ability to report on Tech-Prep workplace involvement

The "maturity" of a consortium seems to influence its capacity to report on Tech-Prep students' participation in workplace experiences. For example, 22 percent of FY 1992 grantees, 5 percent of FY 1993 grantees, and 1 percent of FY 1994 grantees reported the number of Tech-Prep students involved in work-based learning. This outcome is consistent with other results: older, more established consortia were more likely to be able to identify and track the progress of Tech-Prep students. In addition, older consortia were more likely than recent Tech-Prep grantees to offer workplace experiences to Tech-Prep students.

Visits to work sites are the most common workplace activity for Tech-Prep students

A variety of activities are considered work-based learning opportunities in the STWOA, and Tech-Prep students appear to have participated to some extent in most of them. More Tech-Prep students were involved in work-site visits than any other type of workplace experience. More than 23,832 Tech-Prep participants from 144 consortia visited at least one employer's work site during the 1993-1994 school year (Figure III.2). A paid, part-time job, which could include jobs associated with cooperative education, work-study, or youth apprenticeship programs during the school year, was the second most common type of workplace activity for Tech-Prep students, according to consortia reports. Fewer students were involved in other types of workplace opportunities. Some Tech-Prep students probably participated and were counted in more than one activity during the year.

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[1](...continued)
school year exceeded the number of reported Tech-Prep participants by more than 10 percent. In 15 consortia, reports of participation in workplace activities were discounted because participation was reported in more districts than could report the number of Tech-Prep students. These inconsistencies are not unusual for responses to complex question patterns and counts of participation and outcomes.

TABLE III.1

CONSORTIUM ABILITY TO REPORT ON WORKPLACE PARTICIPATION, BY TYPE OF WORKPLACE ACTIVITY

Type of Activity	Number of Consortia Providing Data on Workplace Participation	Total Number of Districts in Reporting Consortia	Number of Consortium Districts that Count Tech-Prep Students	Number of Districts that Count Tech-Prep Students in Workplace Activities
Work-Site Visits	144	1,335	799	406
Paid Summer Jobs	102	858	508	216
Unpaid Summer Jobs/Internships	47	533	288	83
Paid Part-Time School-Year Jobs	130	1,134	677	325
Unpaid School-Year Jobs/Internships	80	733	438	173
Assignment to Workplace Mentors	79	668	395	142
Other	7	72	65	17

SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1994.

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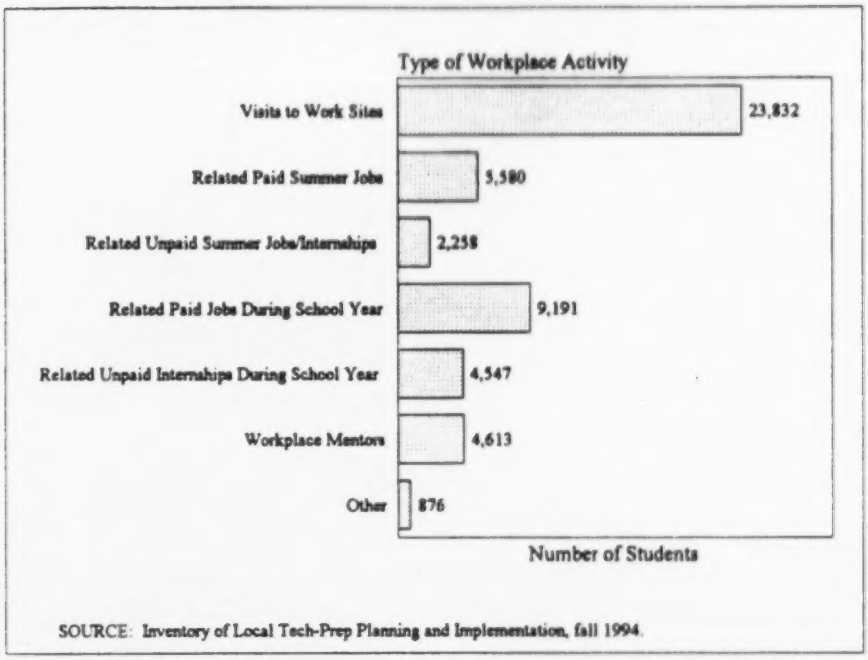
FIGURE III.2

NUMBER OF TECH-PREP STUDENTS PARTICIPATING IN SPECIFIED WORKPLACE ACTIVITIES, 1993-1994 SCHOOL YEAR



SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1994.

Only a small fraction of Tech-Prep students are so far involved in any workplace activity

Many practitioners believe Tech-Prep has the potential to provide a framework for developing school-to-work systems, according to informal discussions with state and local coordinators. To achieve this potential, Tech-Prep programs would have to expand the number of participants and systematically involve the majority of students in work-based learning. The survey data suggest that, at least in 1994, Tech-Prep consortia were quite far from achieving such widespread workplace activity. Among consortia that reported on Tech-Prep involvement in workplace activities, the proportion of Tech-Prep students who participated in these activities was quite small (Figure III.3). The largest group of Tech-Prep students (14 percent) was involved in visits to employer work sites. Fewer than five percent of Tech-Prep students had summer or school-year jobs related to their school-based occupational program. Since Tech-Prep participants represent only a fraction of all students, and the STWOA envisions broad participation in workplace activity for students in general, increasing the scale of workplace activity for STW systems remains a substantial challenge.

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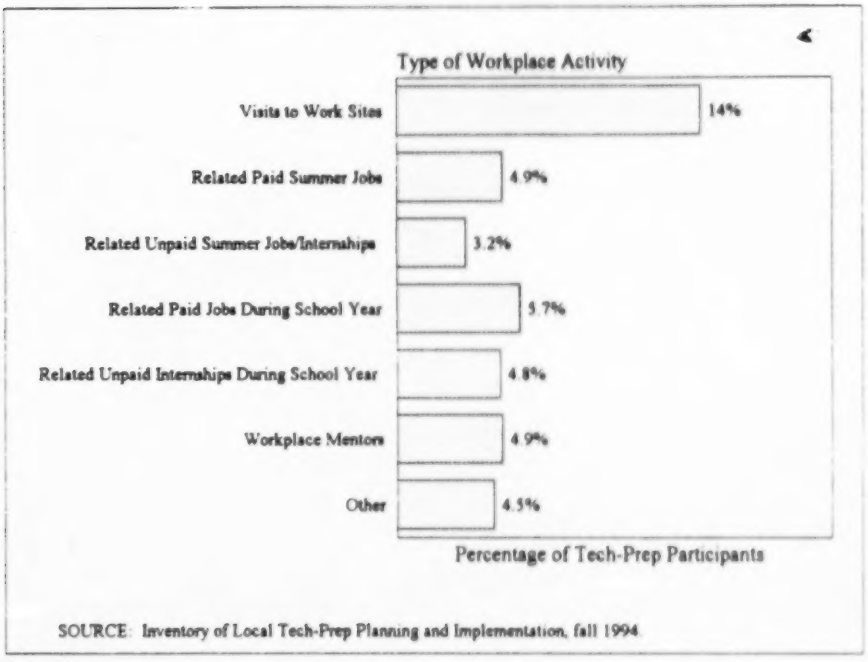
FIGURE III 3

PROPORTION OF TECH-PREP PARTICIPANTS IN SPECIFIED WORKPLACE ACTIVITIES, 1993-1994 SCHOOL YEAR



SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1994

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IV. COLLABORATION AND CONNECTING ACTIVITIES

School-to-work systems are intended to be stimulated and maintained by collaborations of secondary and postsecondary educational institutions, businesses, labor unions, and community-based and other organizations, with input and support from parents and students. Each of these groups brings its particular perspective, expertise, and resources to the partnership. The STWOA encourages partnerships to link the activities of members and to enhance the level of collaboration and integration of key school-to-work components. Such collaboration and "connecting activities" are already features of some Tech-Prep initiatives. Examining the extent to which Tech-Prep is implemented with these features can provide some indication of how STW partnerships might be constituted.

A. TECH-PREP CONSORTIA AS SCHOOL-TO-WORK PARTNERSHIPS

The types of institutions and organizations required as partners in STWOA-funded initiatives are similar to those required in Tech-Prep consortia. The Tech-Prep legislation stipulates that Title III-E grants be awarded to consortia composed of educational agencies serving secondary students and postsecondary institutions; these agencies and institutions can include school districts, area vocational education schools, institutions offering registered apprenticeships, and some postsecondary proprietary schools. The Tech-Prep Education Act also instructs state administering agencies to give special consideration to grant applications from consortia that "are developed in consultation with business, industry, and labor unions." Amendments to the act in July 1994 also encouraged consortium applications that involve "institutions of higher education that award baccalaureate degrees." Thus, inclusive Tech-Prep consortia can provide a solid foundation for building school-to-work partnerships, if states and local leaders choose that approach.

The Tech-Prep surveys provide some information about the composition and resources of consortia and their readiness for school-to-work system development.[1] We can address the following four questions with the survey data:

1. To what extent are relationships among key school-to-work partners already established in Tech-Prep communities?

2. In what ways does the business community support education reform efforts such as Tech-Prep, and potentially school-to-work?

3. To what extent have Tech-Prep communities been formally drawn into STWOA-funded efforts?

4. Are Tech-Prep consortia that received early STWOA funds different from other consortia?

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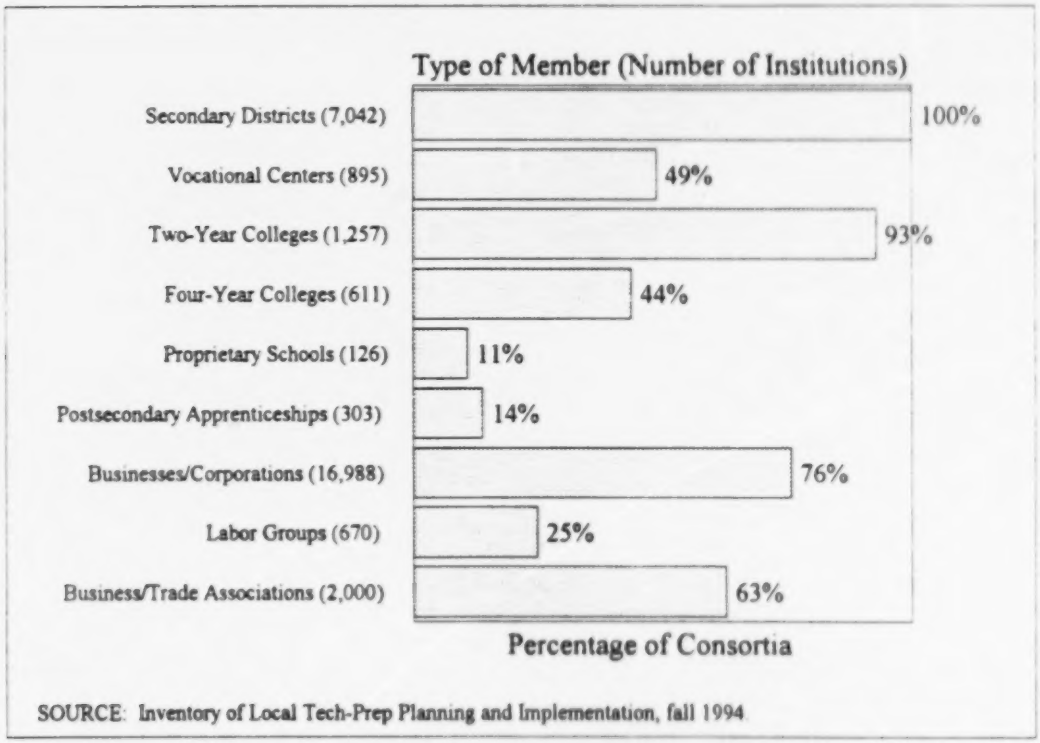
[1] MPR added a series of questions to the fall 1994 survey to help identify consortia that had received STWOA grants.

Many Tech-Prep consortia include the broad membership the STWOA promotes

Tech-Prep consortia in some communities already include institutions and organizations that go beyond the narrow consortium definition in the legislation and approximate the broad coalitions the STWOA encourages. Although Tech-Prep consortia are only required to include secondary agencies and two-year degree- or certificate-granting postsecondary institutions, many include four-year colleges, businesses, trade associations, and labor groups (Figure IV.1). For example, nearly three-quarters of consortia included at least one employer as a member in 1994. Local business/industry associations or trade groups, including chambers of commerce, are reportedly members of close to two-thirds of all consortia. About one-quarter of consortia include labor groups (unions).

FIGURE IV.1

MEMBERSHIP IN TECH-PREP CONSORTIA, FALL 1994



SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1994.

These levels of participation in Tech-Prep consortia by entities the STWOA requires do not suggest that all consortia could currently be considered school-to-work partnerships as defined in the STWOA. The reported growth of business, industry, and labor membership in Tech-Prep consortia does, however, suggest a response to the expectations of the STWOA. Between 1993 and 1994, both the percentage of consortia that included these groups as members and the total number of these groups participating increased. Although the proportion of consortia that reported including businesses as members rose only from 72 percent in 1993 to 76 percent in 1994, the number of participating firms rose by 40 percent (from 12,168 to 16,998). On average, consortia with business members included close to 26 firms in 1994. The reported participation of business associations and labor groups also rose substantially.

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Businesses in many communities provide some level of support for school-to-work-type activities

"Membership" in a consortium or partnership can involve different levels of contribution and participation. Building school-to-work systems requires the active participation of business, industry, and labor, rather than a more passive commitment from these groups to sit on advisory boards. The extent to which the private sector is involved in Tech-Prep planning and implementation can provide a baseline measure of their expected support for school-to-work development.

Available data suggest that businesses, corporations, trade associations, and labor organizations already provide tangible assistance for school-to-work activities under the Tech-Prep banner, and this support is broadening to some extent (Table IV.1). Although the overall fraction of consortia that received support from these groups did not change appreciably between 1993 and 1994, consortia that received support obtained more types of assistance in 1994 than in the previous year. For example, 57 percent of consortia reported having business representatives as guest speakers in classrooms or assemblies in the 1993-1994 school year, compared with 49 percent a year earlier. Business, industry, and labor also reportedly increased their participation in Tech-Prep communities by providing more consortia with opportunities for students to tour work sites and other career awareness activities, as well as support for staff development activities for counselors and instructors through workplace visits and discussions. All of these activities are consistent with implementation of school-to-work components.

Although business, industry, and labor appear to be playing an increasing role in school-to-work-type efforts in Tech-Prep communities, the extent of their participation in consortium districts is unknown. Consortia were not asked to identify the number of districts in which the business community provided different types of assistance.

Few Tech-Prep communities received STWOA grants for school-to-work system development in 1994

STWOA funding is intended to assist states and localities in broadening earlier education reform efforts such as Tech-Prep into the comprehensive model outlined in the new legislation. At the local level, STWOA funding can be obtained in three ways: as a direct grant from the national School-to-Work Office, as a subgrant under a state implementation grant, or even as a planning grant under the original state development grants awarded in winter 1994. These local grants may be awarded to groups of institutions and organizations that are identical in composition to an established Tech-Prep consortium, include a subset of a consortium's members, or encompass members of multiple Tech-Prep consortia.

Responses from local Tech-Prep coordinators suggest that some Tech-Prep consortia or subsets of their member school districts have received STWOA grants through each of the three possible funding vehicles in the 1994-1995 school year. A total of 191 consortia--22 percent of all consortia--reported receiving a STWOA grant by January 1995 that covered all or some of their member districts. Twenty-two of these consortia reported that their grants had come directly from the national School-to-Work Office, the districts served by these consortia are generally consistent with the communities covered by the STWOA direct local grants and urban/rural high-poverty grants awarded in summer and fall 1994. In the eight states with state implementation grants at that time--Kentucky, Massachusetts, Maine, Michigan, New Jersey, New York, Oregon, and Wisconsin--84 of the 191 Tech-Prep consortia reported receiving an STWOA grant. The remaining 85 consortia that reportedly received STWOA grants most likely were awarded funds under their state's development grant.

TABLE IV.1

TYPES OF SUPPORT RECEIVED FROM BUSINESSES, CORPORATIONS, TRADE ASSOCIATIONS, AND LABOR ORGANIZATIONS
(Percentage of Consortia)

Types of Support	Fiscal Year 1993	Fiscal Year 1994
Working with Staff		
Developing Curriculum	57	61
Defining Outcomes	49	54
Identifying Career Areas	36	39
Marketing Tech-Prep	53	52
Staff Development	44	51
Providing Speakers	49	57
Working with Students		
Career Awareness	47	57
Employees Teaching	16	18
Mentoring	20	28
Facility Tours	47	58
Work-Based Learning	32	
Unpaid Work Experience		32
Apprenticeships	11	
Paid Work Experience		32
Priority Hiring	6	8
Providing Material Resources		
Awards for Students	18	23
Awards for Teachers	6	8
Equipment	29	38
Classroom Space	16	21
None	**24**	**23**

SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1993 and 1994.

NOTE: 702 and 839 consortia responded to the relevant survey item in 1993 and 1994, respectively.

The Tech-Prep survey provides some evidence that states may have been awarding early STWOA funds cautiously in 1994. Some states had not even received a development grant by the time the Tech-Prep survey was administered in fall 1994, and only eight states had received the larger implementation grants. It is therefore not surprising that relatively few Tech-Prep consortia reported receiving STWOA grants, or that STWOA grants received were relatively small in many states. The average STWOA grant amounts for Tech-Prep consortia in the eight original implementation states ($196,521) and for consortia with direct local grants ($610,004) were far higher, on average, than those for other consortia ($48,169).

Most early STWOA grants went to school-to-work partnerships whose composition did not match that of their local Tech-Prep consortia

Direct correspondence between school-to-work partnerships and Tech-Prep consortia appears to have been limited in the first year of STWOA funding, at least with regard to school district membership. Nearly 62 percent of the 191 consortia with STWOA funding in fall 1994 reported that school-to-work grants covered only a subset of their consortium districts. The remaining 38 percent reported that all of their consortium districts were included in a STWOA grant, but the survey question did not allow us to assess whether districts outside of the individual responding consortia were included in the STWOA grant as well--that is, whether the school-to-work grant went to an entity that included but was larger than the Tech-Prep consortium. Thus, 38 percent is an upper-bound estimate of the proportion of consortia that in 1994 were identical to STWOA-funded partnerships in terms of district membership. Overall, in the consortia that received STWOA grants, only about 20 percent of their districts (549 out of 2,568) were covered by those grants.

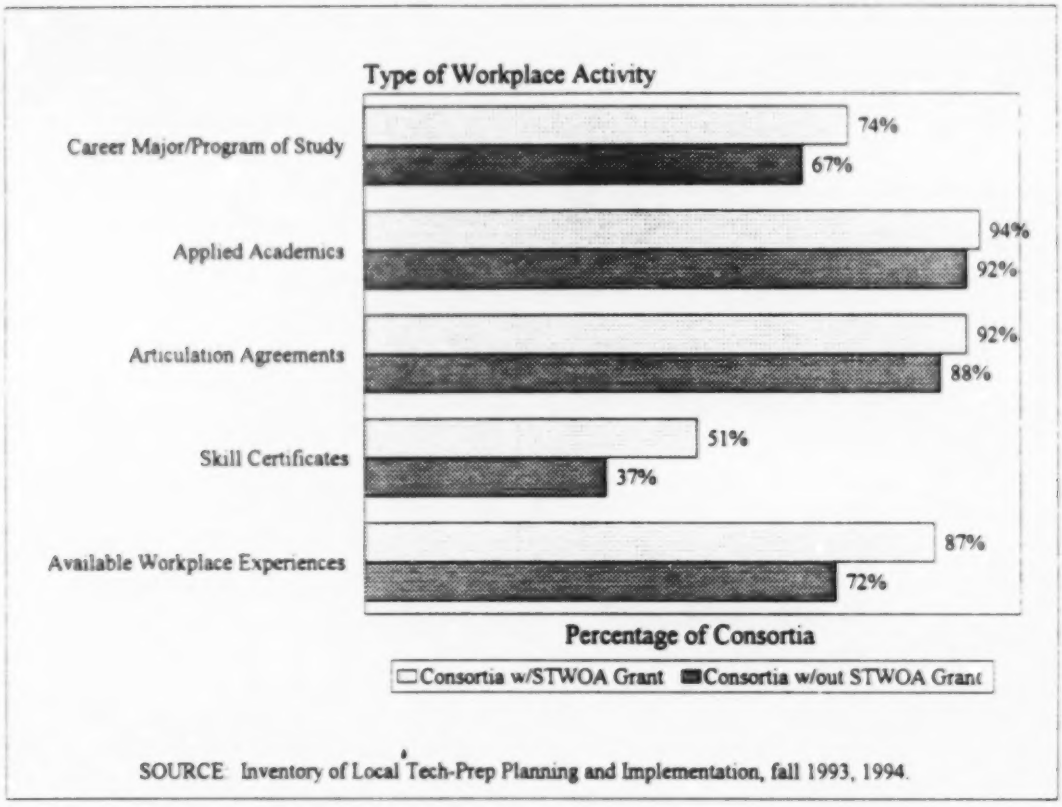
The lack of exact comparability in districts between funded school-to-work partnerships and Tech-Prep consortia in the same local areas is not unexpected. Many states have chosen to form school-to-work partnerships using boundaries other than Tech-Prep consortia. Some states, anticipating federal legislation establishing block grants for education and training, have created large school-to-work partnerships to serve a regional area and take on broadly defined workforce development functions. These larger organizational structures may include multiple Tech-Prep consortia in their entirety or straddle several consortia. On the other hand, many states used the early STWOA development grants to fund small entities--even a single district. In some states, the development grants were awarded to existing Tech-Prep consortia, but for piloting school-to-work initiatives in a subset of their consortium districts or schools.

Consortia with first year STWOA funds were more likely to be implementing key school-to-work and Tech-Prep components than other consortia

Consortia that received early STWOA grants covering at least some of their member districts were somewhat more advanced than other consortia. These 191 consortia were more likely to make available career-focused programs of study, academic curricula emphasizing applied learning, articulation agreements, and particularly skill certificate and workplace experiences (Figure IV.2). These data confirm that both the national School-to-Work Office and state agencies awarded STWOA grants competitively--that is, early funding was given to communities that had demonstrated some experience with important school-to-work elements. The data also suggest that an early start on Tech-Prep development may have been a factor in those awards, consortia with STWOA grants in 1994 were much more likely to have been funded by Title III-E beginning in FY 1992 than in later years.

FIGURE IV.2

IMPLEMENTATION OF KEY SCHOOL-TO-WORK FEATURES AMONG TECH-PREP CONSORTIA, BY WHETHER THEY RECEIVED A STWOA GRANT



SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1993, 1994.

Early STWOA-funded consortia had probably already implemented special work-based learning initiatives that caught the attention of agencies awarding those grants. Among all Tech-Prep consortia awarding skill certificates, those with school-to-work grants were far more likely to include program completion and time in the program as outcomes documented on the certificates. These two skill certificate topics are commonly associated with youth apprenticeship and other focused work-based learning programs. STWOA-funded consortia were also more likely to report including the approval of employers on skill certificates than other consortia. Moreover, consortia with STWOA grants included a disproportionate share of Tech-Prep students in workplace activities in the 1993-1994 school year; although the STWOA-funded consortia represent only 22 percent of all consortia, they accounted for nearly 50 percent of all reported Tech-Prep students in paid, extended school year jobs or internships.

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B. STAFF DEVELOPMENT

To implement the reforms and produce the institutional changes envisioned by the STWOA and the Tech-Prep Education Act, staff from member organizations must become knowledgeable about key program components. Staff must also be prepared to undertake new roles and responsibilities. Both laws explicitly acknowledge the importance of staff development to the success of the initiatives and encourage coordinating agencies to devote resources to these activities. In the Tech-Prep legislation, in-service training for teachers and counselors is one of seven essential elements. In the STWOA, training for school and workplace staff is an important connecting activity. Because school-to-work systems will be implemented in existing Tech-Prep communities, the extent of staff members' familiarity with school-to-work topics will be important for the development of the new initiatives.

The Tech-Prep surveys can provide information on two issues related to staff development.

1. Are key school-to-work concepts included in staff development activities in Tech-Prep communities?

2. To what extent and how are school staff exposed to the general or technical requirements of employer workplaces?

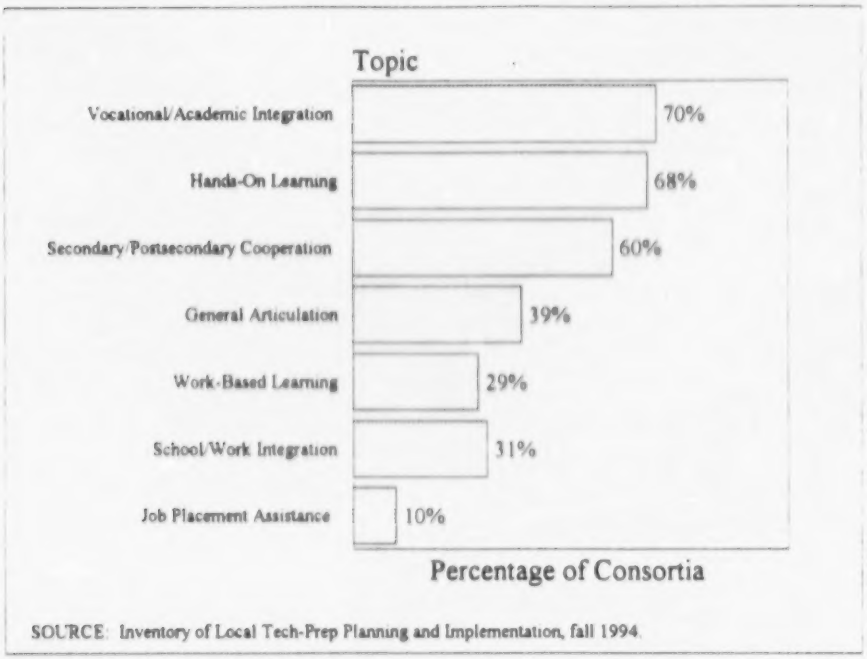
Staff training on school-to-work topics is already under way

School-to-work partnerships in many communities will reap the benefits of prior staff development under the auspices of Tech-Prep. In both 1993 and 1994, most Tech-Prep consortia involved school and work-site staff to some extent in activities designed to familiarize them with concepts vital to school-to-work. Staff training in Tech-Prep communities focused on curriculum approaches encouraged by STWOA. In 1994, for example, approximately 70 percent of consortia reported that hands-on learning and integration of academic and vocational education were the most highly emphasized topics in staff development activities that year (Figure IV.3). About 30 percent of all consortia concentrated staff development activities on work-based learning and/or integration of school and work.

All types of staff received training in school-to-work concepts. Consortia focused staff development activities on their own staff as well as secondary school staff. More than 95 percent of all consortia reported including their staff, secondary school administrators, teachers, and counselors in training activities. Postsecondary staff also participated in staff development at high rates in more than three-quarters of the consortia. It is important to note that nearly three-quarters of consortia included local representatives or staff of business, industry, or labor in staff training events in 1994.

FIGURE IV.3

MOST HIGHLY EMPHASIZED STAFF DEVELOPMENT TOPICS



SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1994.

Most consortia report introducing school staff to employer workplace requirements

Linking students' instruction and experiences in school and at a work site, and training staff to create these linkages, are important elements of the STWOA model. One approach to integrating school-based and work-based learning involves exposing school staff to the general or technical requirements of employer workplaces; the knowledge teachers, counselors, and administrators gain through these experiences may help them to implement integrated curricula or activities at school.

Schools in many consortia are already providing their staff with some opportunities to interact with employers and/or observe employer work sites. In 1994, more than 80 percent of consortia reported that the consortium or its member schools organized some type of interaction between school and employer staff. These interactions varied from joint participation on a vocational advisory panel to teacher and counselor internships at worksites. It is not known, however, how extensive these exchanges were; consortia were not asked to document the number of districts in which the activities took place, the number of staff involved, or the frequency of the activities.

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Work-site visits are a common way of exposing school staff to the business environment

Communities can implement a variety of approaches to help teachers, counselors, and administrators become familiar with the expectations and environments of local firms. Some involve school staff in meetings with employers, held at school or elsewhere. Others allow school personnel to visit employer work sites. Employers in some communities are invited to be guest speakers in school classrooms or assemblies.

Consortia report that all of these methods have been used to some extent in participating schools (Table IV.2). Having school staff conduct an occasional visit to a local firm is one of the most common methods; in 1994, academic teachers, vocational teachers, and counselors participated in this type of staff development activity in 53 percent, 66 percent, and 48 percent of all consortia, respectively. Similar proportions of consortia reported that at least some member schools had brought employers into classrooms to teach, lecture, or demonstrate skills required in the workplace. Many consortia also used vocational-technical advisory committees as an opportunity to promote interaction between school and work-site staff.

Vocational teachers appear to be more involved than academic personnel in consortium efforts to expose school staff to the business environment. The objective of vocational education is to provide students with job skills, and this goal is best achieved when teachers stay up-to-date and knowledgeable about new technology and other changes in industry. Moreover, it is not unusual for vocational teachers to have established relationships with local firms, through job experience prior to teaching or through advisory committees in which employers participate. In contrast, interaction between academic teachers and employers has been less common (Table IV.2).

C. MATCHING STUDENTS WITH WORKPLACE OPPORTUNITIES

An important task in any school-to-work system is coordinating the placement of students in work-based learning experiences. Some individuals or organizations must take responsibility for identifying and keeping track of available workplace opportunities, as well as for determining the best assignments for students with varying career interests, skills, and, perhaps, transportation constraints. This task is considered a key connecting activity in the STWOA.

Although work-based learning is not a required element of Tech-Prep, some consortia are placing students in work sites to enhance their overall educational experience, as described earlier. Information from the Tech-Prep survey illustrates how students are matched with workplace opportunities in Tech-Prep communities.

Secondary school staff are the most involved in placing students in workplace experiences

Several types of organizations and staff may match students with workplace opportunities. These include staff from secondary schools, postsecondary schools, intermediary organizations that work with schools and employers (for example, a chamber of commerce or private industry council), or employers themselves. Data from the survey indicate that, in most consortia, secondary school staff are most likely to play this role (Figure IV.4).

TABLE IV 2

METHODS USED TO FAMILIARIZE SCHOOL STAFF WITH EMPLOYERS AND WORKPLACES IN 1994, BY TYPE OF METHOD AND TYPE OF STAFF
(Percentage of Consortia)

	Academic Personnel		Vocational Personnel		
	Teachers	Administrators	Teachers	Administrators	Counselors
Visits to Work Sites	53.1	39.0	66.3	48.6	48.4
Internships at Work Sites	23.5	4.2	32.2	5.5	12.8
Individual Meetings with Employers	38.3	38.3	55.9	50.4	40.1
Employers Attend Board Meetings	21.5	30.7	28.1	34.6	22.4
Employers Attend Vocational-Technical Advisory Committees	40.5	46.9	68.1	66.6	47.6
Employers Speak in Classrooms	56.2	20.9	65.7	25.8	31.9

SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1994.

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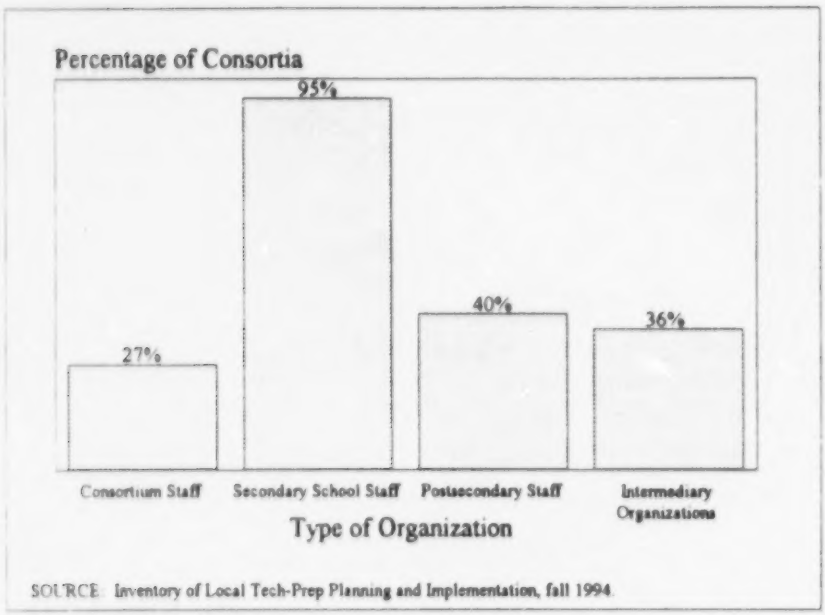
FIGURE IV.4

TYPES OF ORGANIZATIONS INVOLVED IN PLACING STUDENTS IN WORKPLACE EXPERIENCES



SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1994.

This result, based on data for the 1993-1994 school year, is not surprising. Although the STWOA implicitly encourages intermediary organizations to assist in matching students with workplace opportunities, consortia had just begun to respond to the requirements of the new law when the survey was administered. Survey responses preceded the formation of formal school-to-work partnerships and STWOA awards in most Tech-Prep communities. The lead role of secondary school staff probably reflects the fact that many schools and districts employ cooperative education or work experience coordinators, whose primary role is to match interested students with appropriate workplace positions.

D. DATA COLLECTION

The STWOA requires partnerships to collect and analyze data on the participation and outcomes of students in school-to-work initiatives. Tech-Prep consortia operate under no such legislative mandate, but state administering agencies are required to report to ED annually on Tech-Prep participation. Thus, local consortia are under pressure to document the number of students participating in Tech-Prep and to track their progress. Some states now require consortia to provide them with counts of participating students as a condition of consortium grant awards. The national evaluation's annual Tech-Prep surveys, which ask for such data, also encourage such local data collection efforts.

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School-to-work partnerships are likely to face the same challenges as Tech-Prep consortia in documenting student data. The surveys allow us to address two important issues:

1. To what extent do consortia and their schools collect information on student participation and outcomes?

2. Are systems in place to help document student data?

Current student data collection is limited but improving

Tech-Prep consortia still have a long way to go in reporting on student participants. In 1994, 83 percent of consortia were able to report a definition of Tech-Prep participation, but only 53 percent of consortia reported actual counts of Tech-Prep students. Reporting consortia were able to count Tech-Prep students in only 30 percent of their member districts. These figures represent a substantial improvement in reporting capacity over the previous year, however. In 1993, only 71 percent of consortia reported definitions of participation, and 36 percent reported counts of students for 17 percent of their districts.

In 1994, higher proportions of consortia could also document numbers of Tech-Prep students who graduated from high school, entered a postsecondary program, or took jobs after graduation. Twenty-seven percent of consortia provided counts of Tech-Prep high school graduates in 1994, compared with only 13 percent of consortia in 1993. Similarly, 17 percent reported on postsecondary enrollments in 1994, compared with 9 percent in 1993.

Collecting information on student progress is likely to remain challenging

Several factors affect Tech-Prep consortium capacity to measure participation and outcomes, and these factors will affect school-to-work partnerships as well. First, these initiatives were still quite new in fall 1994. Many Tech-Prep consortia were still in the early stage of development--planning and determining objectives, target populations, and program elements. Some of these had not yet developed a definition for identifying who is a Tech-Prep student, much less enrolled students who fit these definitions. School-to-work partnerships are likely to go through a similar process, although the pace of development and decision making may be accelerated because of the groundwork Tech-Prep programs have laid in their communities.

Second, some Tech-Prep consortia lack the resources or leverage to collect data from members. School-to-work partnerships are likely to face similar obstacles. Some districts and schools do not have computerized files that enable them to determine easily the number of students meeting a participation definition or to document the progress of identified participants. Some consortia and school-to-work partnerships may not operate as cohesive units; central staff requests for data from individual member schools or employers may be met with less than full cooperation.

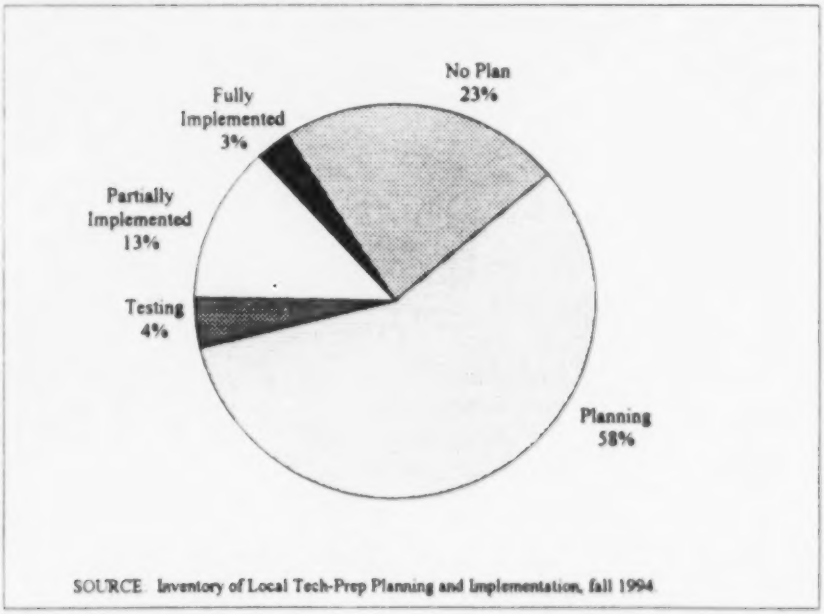
Finally, a systemwide approach to implementation may make data collection more difficult. When Tech-Prep or other reforms are implemented as a distinct program--with a set of required activities--and participants are defined by their choice of the program as a path, staff can count application forms, for example, to determine the number of participating students. In contrast, when components are broadly available to all students, and students can be involved to different degrees in each component, it is more challenging to determine which students are actually affected by the educational changes reform efforts promote. Who is a "participant" may therefore remain a difficult question for many partnerships to answer clearly.

Plans to develop student databases are common, but implementation is not

Consortia reported ambitious plans for creating and linking computer systems that will allow member schools to identify and track the progress of individual Tech-Prep participants. More than three-fourths of all consortia reported in 1993 or 1994 that they expected to develop or have already developed a computerized student database that allows them to access data on Tech-Prep students (Figure IV.5).[2] Very few consortia have implemented such a system, however. Almost 60 percent of consortia are still in the planning stages.

FIGURE IV.5

PERCENTAGE OF CONSORTIA WITH STUDENT DATABASES IN DIFFERENT STAGES OF DEVELOPMENT



SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1994.

[2]Questions about plans for data collection systems were not included in the second annual survey completed by approximately three-fourths of fall 1994 respondents. Statistics about this component represent a composite of 1993 and 1994 responses.

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Most database designs focus primarily on documenting transcript information

In order to collect and analyze the participation and outcome data required under the STWOA, school-to-work partnerships will need systems to help track a wide variety of information. Evidence from the Tech-Prep surveys suggests that data collection planned or under way in many communities is relatively limited.

Consortia that were testing or implementing student databases in late 1993 or 1994 track standard transcript data more often than any other type of student data. Academic and vocational courses taken or completed and grades attained were the most common items included in databases (Table IV.3). Program enrollment by course cluster or major was included almost as frequently; these data may also be based on transcript information, because clusters are often defined according to courses taken. Fewer than half of the consortia included or planned to include specific competencies in their databases.

The status of data systems in Tech-Prep communities suggests some challenges that lie ahead for school-to-work reporting. States and partnerships are required under the STWOA to track school-to-work participation and outcomes by demographic group. However, current student databases or plans for them may be inadequate for school-to-work partnership needs. In Tech-Prep communities, work-related information was not standard in databases close to completion. Only about a third of consortia that were testing or implementing databases recorded information about workplace experiences, postprogram job placements, or wages. It seems likely that most databases used to track Tech-Prep participation and outcomes are identical to or are enhanced versions of regular school data systems. These systems will require further enhancement or new systems will need to be developed to meet the more comprehensive reporting objectives of the STWOA.

TABLE IV.3

ELEMENTS INCLUDED IN TECH-PREP STUDENT DATABASES
(Percentage of Consortia)

Data Element	Collecting or Planning to Collect Data	
	On Secondary Students	On Postsecondary Students
Academic Courses Taken/Completed	78	50
Vocational/Occupational Courses Taken/Completed	86	51
Technical Skills Competencies Attained	45	27
Grades	75	49
Career Counseling Services Received/Used	31	17
Level of Remediation Requires	30	32
Program Enrollment by Career Cluster or Occupational Specialty	74	43
Diploma/Degree/Certificate Attainment	56	45
Workplace Experiences as a Part of Tech-Prep	31	19
Job Placement Data (For Example, Placement in Occupations Related to the Course of Study)	27	27
Wage/Salary Data	12	15
Employer Satisfaction Information	14	14

SOURCE: Inventory of Local Tech-Prep Planning and Implementation, fall 1994.

*Table entries are percentages of consortia that reported currently testing or implementing a database to monitor outcomes of Tech-Prep students. Overall, these consortia represented approximately 20 percent of all consortia responding to the survey.